

GOVERNMENT OF INDIA

DEPARTMENT OF ARCHAEOLOGY

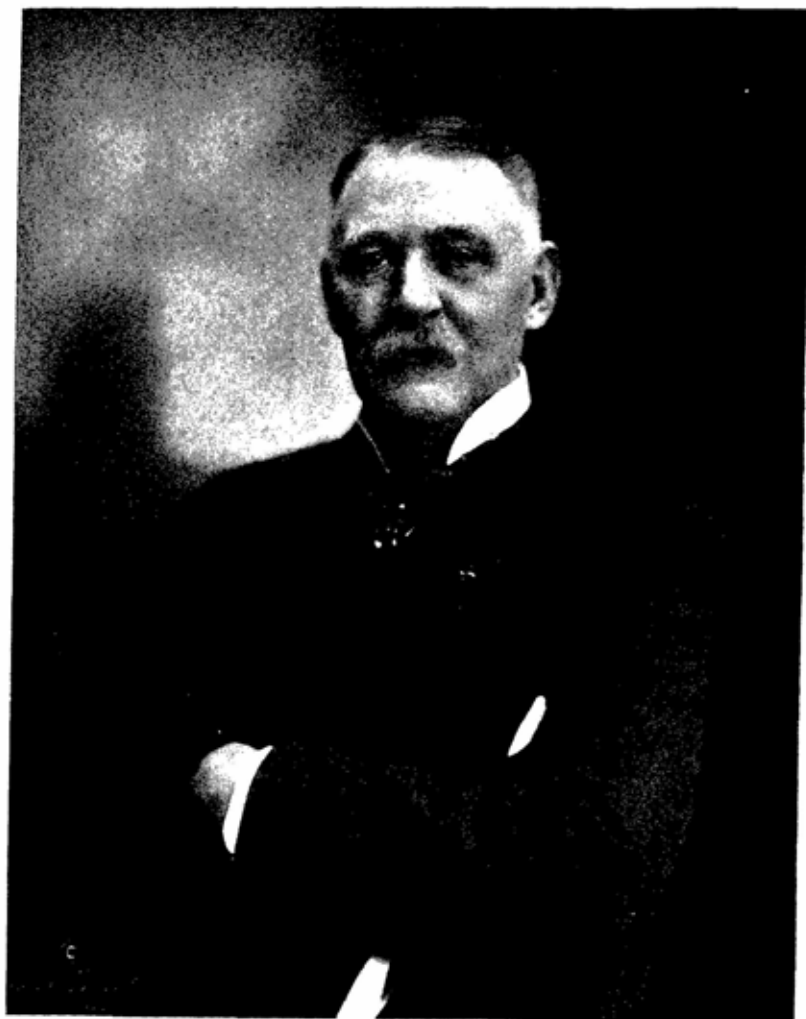
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THE LATE NORMAN B. REAM
An Incorporator and Trustee of the Museum.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 186.

REPORT SERIES.

VOL. V, No. 1.

ANNUAL REPORT OF THE DIRECTOR

TO THE
BOARD OF TRUSTEES

FOR THE YEAR 1915.

32837



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A.R.C.N.H.M.



CHICAGO, U. S. A.
January, 1916.

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ANNUAL REPORT OF THE DIRECTOR.

1915

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1915.

Pursuing the announced policy of the Museum, its efforts during the year have continued to concentrate upon the preparation for exhibition in the new Museum building of such material as had been previously acquired. This material is of a character that when properly installed will fit into the general exhibition scheme which has been based fully as much upon material in storage as material in cases. Therefore the progress that has marked the period of this report has been largely due to the labors of the preparators, the taxidermists and the skilled workmen, and no particular effort has been made to acquire new material either by expedition or purchase. Later it is expected that some elimination of early work and imperfect material will take place.

The contract between the South Park Commissioners and the Museum corporation, granting a site for the new building near and south of Twelfth street extended in an easterly direction, was consummated on January 27th. The work upon the new Museum building, actually commenced on July 26th, has progressed with such vigor that the date on which the edifice will be ready for occupation has been considerably advanced. The impetus given to the building operations has had its influence during the past four months upon the scientific staff, and plans for installation, the system of transfer, the arrangements of the halls, offices, laboratories, work rooms, shops, etc., have received much attention on the part of the curators and their assistants. It is not considered necessary, if pertinent, to discuss the progress of the new building in these reports, in as much as the entire work and its responsibilities rests upon and within the Building Committee, but, as items of history in the development of the Museum as a whole, simple record of the work is considered permissible. The Board of Trustees has granted the request of the Chicago Geographic Society for permanent quarters in the new Museum building.

The report of the expert from Graham, Burnham & Company, who examined the present Museum building, indicates that the physical

condition of the structure is safe and stable. A thorough examination of the present building was also made by expert inspectors to examine the fire conditions and the protection and equipment for the prevention and extinguishing of fires, who report that a high degree of precaution is exercised insofar as fire hazard in the building was concerned and that the protection was good and well maintained. Three minor defects in the system were noted and the recommendations to remedy these have been carried out.

A committee of citizens interested in the establishment of an aquarium addressed the Board of Trustees to ascertain to what extent the authorities of the Museum would support the movement and contribute scientific assistance or control of its management. The response of the Board was not only in favor of establishing the aquarium, especially if a location could be obtained in proximity to the new Museum building, but the Trustees declared their willingness and their desire to accept the scientific management of the proposed aquarium.

A review of the acquisitions of the Museum by gift and purchase during the past year will demonstrate the increasing wealth of the Institution. Among the gifts may be mentioned many from the exhibiting countries and individuals at the Panama-Pacific International Exposition. The Museum acquired by purchase some striking and attractive material from the Chinese Government, which had been on exhibition at San Francisco. Other interesting material not costly but unusual and desirable was also purchased. Special mention should be made of the gift of Mr. Fritz von Frantzius, consisting of two Imperial Chinese Jade books and a collection of Japanese coins.

The resignation of Dr. George A. Dorsey, Curator of the Department of Anthropology, after twenty years service with the Institution, created a vacancy which was filled by the appointment of Dr. Berthold Laufer as Curator of the Department. Dr. Laufer was formerly the Associate Curator of Asiatic Ethnology and, during the year Dr. Dorsey was absent in the Orient, assumed the duties of Acting Curator. His extensive and varied experience in scientific research and investigation has specially qualified Dr. Laufer for the position to which he has been appointed. He has conducted expeditions into eastern Siberia for exploration of the ethnology of native tribes and to Tibet and China for culture-historical investigations and ethnological collections; was assistant curator of ethnology at the American Museum of Natural History; lecturer in anthropology and East-Asiatic languages at Columbia University, and is the author of many important books and papers relating to the ethnology, archaeology and philology of the East.

With funds contributed by Mr. Norman W. Harris an attractive and

instructive exhibit of the Harris Public School Extension cases was made at the Panama-Pacific International Exposition. The exhibit excited considerable interest and much favorable comment on the part of visitors at the Exposition and was the means of inaugurating serious consideration of the adoption of this system of education both in foreign countries and in other cities of the United States. The Japanese government asked for type cases for the information of the Imperial Department of Education. The exhibit was awarded a grand prize by the International Jury.

During the year Mr. Chauncey Keep became a Corporate Member of the Museum and was also elected a member of the Board of Trustees to fill a vacancy in the Board.

The following elections of honorary positions in connection with the Institution have been made during the past year. Mr. Fritz von Frantzius and Mr. Henry J. Patten were elected Life Members. Chiefly in recognition for their support and services in affairs of the site for the new building, Mr. Charles L. Hutchinson, Mr. Edward B. Butler, and Mr. Charles H. Markham were elected Patrons of the Museum. Mr. Albert M. Collins of Philadelphia and Mr. Lee Garnett Day of New York were elected Patrons of the Museum in view of the eminent services they have rendered to the Institution.

Mr. Norman B. Ream, who has been a member of the Board of Trustees from its organization, but who during recent years has resided in New York, died on February 9, 1915. The death of Dr. Daniel Giraud Elliot, which occurred on December 22nd, a prominent man in science, who resigned from the staff of the Museum after twelve years of service as Curator of the Department of Zoology, has to be recorded. Prof. Frederick Ward Putnam, formerly professor of American archaeology and ethnology at Harvard University and curator of the Peabody Museum, and a Patron of Field Museum of Natural History since January 31, 1898, died at Cambridge on August 14th. Mr. Robert F. Cummings, an Honorary Member of the Museum, who provided liberal funds for expeditions, for surveys and collections in the Philippine Islands and whose generosity has permitted the Museum to bring together a very extensive and attractive Philippine ethnology exhibit, died on December 31, 1914.

MAINTENANCE. — The budget approved by the Board of Trustees provided the sum of \$144,050 for the maintenance of the Museum for the fiscal year. The actual amount expended was \$124,185, leaving a balance within the anticipated expense for the year of approximately \$19,000. In addition to the cost of maintenance sums were expended for collections, new installation and expeditions that brought the total

to \$181,000. As will be observed from the details of the financial statement the sum of \$7,075, representing individual contributions, has also been disbursed for special collections and expeditions.

PUBLICATIONS.— Six publications were issued during the year, comprising parts of five volumes, details of which follow:

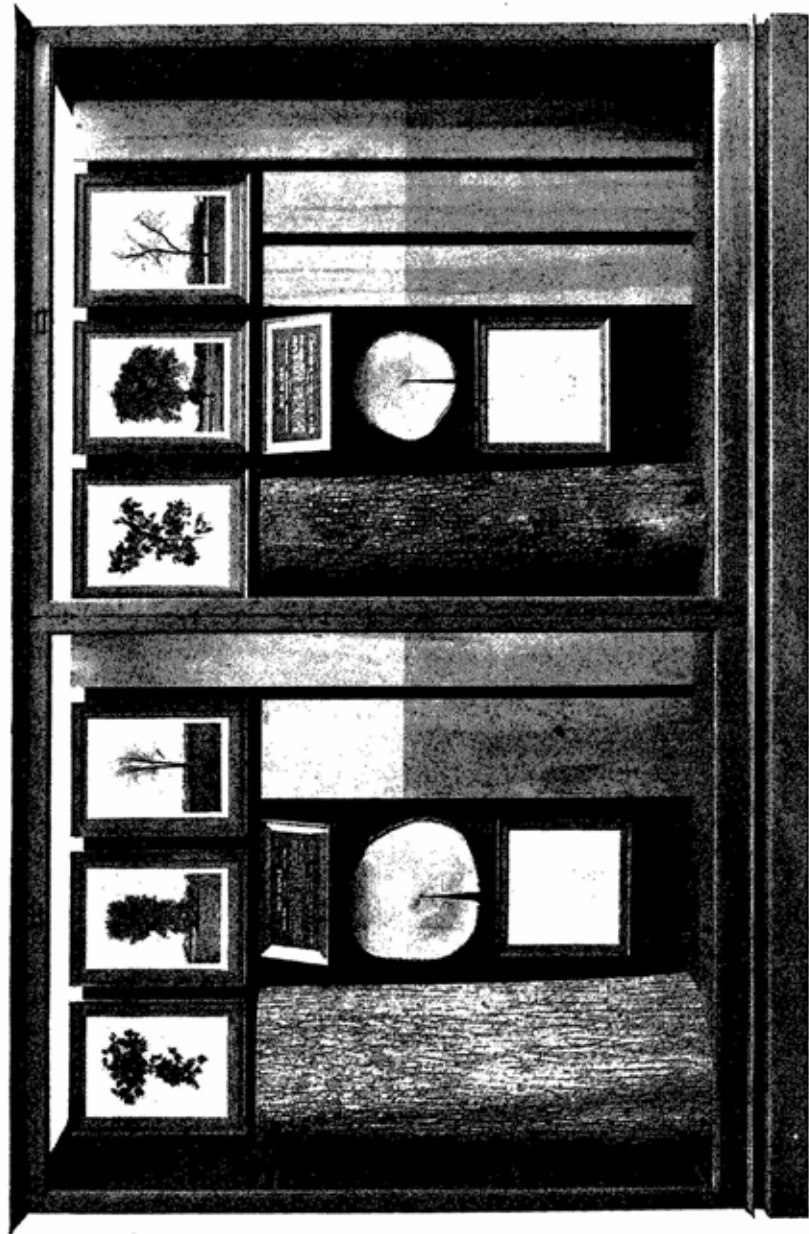
- Pub. 180.— Anthropological Series. Vol. XIV, No. 1. Traditions of the Tinguian. A Study in Philippine Folk-lore. By Fay-Cooper Cole. 126 pages. Edition 1500.
- Pub. 181.— Report Series, Vol. IV, No. 5. Annual Report of the Director to the Board of Trustees for the year 1914. 78 pages. 16 half-tones. Edition 2500.
- Pub. 182.— Ornithological Series, Vol. I, No. 8. Descriptions of New Birds from South America and Adjacent Islands. By Charles B. Cory. 10 pages. Edition 1500.
- Pub. 183.— Ornithological Series, Vol. I, No. 9. Notes on South American Birds, with Descriptions of New Subspecies. By Charles B. Cory. 33 pages. Edition 1500.
- Pub. 184.— Anthropological Series, Vol. XV, No. 1. The Diamond. A Study in Chinese and Hellenistic Folk-lore. By Berthold Laufer. 75 pages. Edition 1500.
- Pub. 185.— Zoological Series, Vol. X, No. 13. New Mammals from Brazil and Peru. By Wilfred H. Osgood. 12 pages. Edition 1500.

NAMES ON MAILING LIST

Domestic	523
Foreign	672
	<hr/>
	1,195

DISTRIBUTION OF FOREIGN EXCHANGES

Africa	20	Holland	20
Australia	37	India	18
Austria	32	Italy	36
Belgium	18	Japan	10
Borneo	1	Java	4
Bulgaria	1	Mexico	19
Canada	27	Norway	8
Central America	7	Portugal	5
China	1	Russia	16
Denmark	8	South America	29
France	54	Spain	7
Germany	134	Sweden	14
Great Britain	117	Switzerland	23
Greece	1	West Indies	45



TYPE CASE - NORTH AMERICAN FORESTRY.

Each half case, or unit, is a complete monographic assemblage of elements combining to represent all characters of the tree and its lumber. The trunk specimens are in ratio size.

DISTRIBUTION OF DOMESTIC EXCHANGES

Alabama	2	New Hampshire	4
Arkansas	1	New Jersey	11
California	24	New Mexico	3
Colorado	10	New York	68
Connecticut	18	North Carolina	6
Delaware	2	North Dakota	2
District of Columbia	39	Ohio	19
Florida	4	Oklahoma	3
Idaho	1	Oregon	1
Illinois	56	Pennsylvania	33
Indiana	15	Rhode Island	4
Iowa	15	South Carolina	2
Kansas	6	South Dakota	2
Kentucky	3	Tennessee	2
Louisiana	4	Texas	3
Maine	7	Utah	1
Maryland	8	Vermont	3
Massachusetts	54	Virginia	4
Michigan	11	Washington	6
Minnesota	8	West Virginia	5
Mississippi	2	Wisconsin	17
Missouri	12	Wyoming	2
Montana	2	Cuba	3
Nebraska	6	Hawaii	4
Nevada	2	Philippine Islands	3
		Porto Rico	1

THE LIBRARY.—The books and pamphlets accessioned during the year were 3,400, bringing the total number of books and pamphlets in the library to 68,275, which are distributed as follows:

General Library	44,221
Department of Anthropology	3,293
Department of Botany	6,946
Department of Geology	9,579
Department of Zoology	4,236

Notwithstanding the small number of serial publications received from foreign exchanging institutions, there is a slight increase over the books and pamphlets received during the previous year. Among the gifts of the year is the sumptuous edition of Japanese Temples and Treasures in three illustrated volumes presented by His Imperial Majesty's Commissioner General to the Panama-Pacific International Exposition. The edition is limited to two hundred copies and was especially prepared for the Exposition. Through the Minister of International Affairs, Wellington, New Zealand, a copy of the Illustrated Flora of New Zealand

was received. An almost complete set of its Transactions was presented by the South Australia Royal Society, Adelaide. The Société des Sciences Naturelles, La Rochelle, France, presented a complete set to date of its *Annales* and the Archæological Survey of India eleven of its early Reports to assist in completing the Museum file. Other gifts that have been received are listed elsewhere. The late Dr. Seth E. Meek's ichthyological library, consisting largely of monographic papers and pamphlets, was purchased and from it 2,000 new titles were secured. These have been catalogued and bound. Other important acquisitions by purchase were: The Oxford English Dictionary; Audebert, *Histoire Naturelle des Singes et Makis*, 1800; Berthelot et Ruelle, *Collection des Anciens Alchimistes Grecs*; Hobson, *Chinese Pottery and Porcelain*; sets to date of the *Journal of Indian Art* *Ornithologische Monatsberichte* and *The Zoologische Annalen*.

The number of periodicals received was ninety-nine with twenty-two in subscription sets which have been previously entered. There were bound during the year 564 books, pamphlets and serial publications, and 19,275 cards were written and added to the catalogues. Twelve installments of the John Crerar Library cards have been received and added to its catalogue.

There was an increasing number of students and other visitors who found the library of service in seeking volumes not obtainable in other libraries in the city. A rearrangement of the book cases in the reading room was made during the year that rendered the books more accessible and improved its general appearance.

DEPARTMENTAL CATALOGUING, INVENTORING, AND LABELING. — The work of cataloguing in the Department of Anthropology during the year is quite notable, 10,062 cards having been written. The cards are distributed over the divisions as follows: 975 North American, chiefly Hopi ethnology; 3,071 Melanesian ethnology; 5,027 New Guinea, collections by Umlauff, Voogdt and Dorsey; 932 Asiatic ethnology; and 57 classical archæology. These cards have been entered in the inventory books of the Department, which now number 38, and the total number of cards recorded beginning from the first volume is 139,516. During the year the Department was supplied with 2,664 printed labels, which have been distributed as follows: 720 Physical Anthropology; 1,250 Mrs. T. B. Blackstone Collection; 52 Models of Chinese Boats; 373 Joseph N. Field Collection; 12 Edward E. Ayer Philippine Guns; 249 Classical Archæology; and 8 objects in the Gem Room. From the section of Photography the Department has received 1,310 prints, which have been duly classified and added to the departmental albums, each print having received a typewritten description. Three albums re-

lating to New Guinea were prepared. A catalogue of lantern-slides was inaugurated by the Department, for which 1,537 cards have been written. The slides have been arranged in the succession of the numbers and placed in cardboard boxes with a label pasted in front, showing the range of the numbers, subject, and locality of the slides. By consulting the card-catalogue it is possible to locate any slide or to ascertain what slides relate to a particular subject, region, or tribe. To meet the demand of the public for information on specimens in the collections and as copies of many labels have been solicited by students, a permanent record of all labels written for the Department has been established. When printing labels intended for installation, copies are made, which are mounted on cardboard, and classified according to the cases in which the specimens are installed. These cards, 620 of which have thus far been prepared, are filed in proper order in cabinets showing identification labels on the outside. A card-catalogue of the exhibition cases, which have all been provided with numbers, has also been inaugurated.

All material received by the Department of Botany during the year has been fully catalogued and distributed, either into installation or classified and placed ready for installation. There were catalogued 19,831 sheets of specimens and 20,305 entries have been made, making the total number of entries 432,791.

Cataloguing of all specimens in the Department of Geology is complete, specimens received during the year being catalogued as received. Of the specimens catalogued 2,860 were palæontological specimens; 286 economic specimens; 102 mineralogical specimens and 118 miscellaneous, making a total of 3,366. Labels prepared numbered 660, of which 309 were printed and distributed. Among the collections which were labeled entire were those of the folklore of gems, Pleistocene fossils, coal tar products, and others of the economic series. Among these were several large, descriptive labels. To the Departmental photograph albums 63 prints have been added, making a total of 2,748 prints now in these albums.

In the Department of Zoology 1,793 entries in the primary catalogue for birds and mammals have been made. The systematic card catalogues have received more than usual revision and additions. The collection of mammals in alcohol, principally bats, has been provided with 617 new labels. 1,524 labels for shells have also been written, of which 1,253 were installed.

The following table shows the work performed on catalogues and the inventorying accomplished:

	No. of Record Books	Total No of entries to Dec. 31, 1915	Entries During 1915	Total No. of Cards Written
Department of Anthropology . . .	38	141,302	10,062	139,516
Department of Botany	57	432,791	20,305	65,750
Department of Geology	21	132,711	3,366	7,705
Department of Zoology	40	96,830	1,793	33,565
The Library	14	100,290	3,400	204,967
Section of Photography	17	113,303	24,76	.....

ACCESSIONS. — The number of accessions in the Department of Anthropology amounted to 31 during the year, of which 27 have been entered. The majority of these were received through the generosity of friends of the Institution. Mr. Edward E. Ayer presented several gifts of scientific importance. These include four brass guns (so-called *lantaka*) captured from the Moro on the Philippine Islands and presumably cast by Chinese in the eighteenth century; a collection of 161 chipped stone (mostly obsidian) projectile points from Upper Lake, Lake County, California, comprising a large variety of types; 19 miniature Pomo baskets from California, of striking technique and variety of form and weave; and an interesting collection of beads and perforated shells discovered in a grave with two skeletons, excavated at Leadbetter Landing, Benton County, Tennessee. A group of 20 tear bottles from Egypt, found in Venice by Mr. Ayer during his travels, was purchased by the Museum. A Roman lamp, unearthed in Transylvania, Hungary, was received as a gift from Mr. William J. Chalmers. The East-Asiatic collections have been enriched by several important gifts. Prominent among these are a complete jade book and a jade seal, both being treasures from imperial possession, presented by Mr. Fritz von Frantzius. The jade book is unique inasmuch as it is complete with the original binding in yellow silk brocade and in perfect condition. It consists of ten rectangular slabs carved from exquisite Khotan nephrite (thirty pounds in weight), and is inscribed with a composition in Chinese and Manchu of the famous Emperor K'ang-hi in 1688; when he canonized his grandmother, the Empress Wen, and conferred upon her a posthumous title. The seal, 6¾ pounds in weight, a masterpiece of carving, as recorded by the inscription, was bestowed upon the Empress Jui on February 12, 1796, the day when she was officially appointed Empress of China. A description of these memorable objects has been published in the June number of the *Pine Arts Journal*. Mr. von Frantzius has likewise donated a very instructive collection of Japanese coins and paper money, numbering about 800 specimens, brought together by order of the Japanese Government, and a fine Chinese gold ring decorated with designs in relief. To Dr. Frank W. Gunsaulus the Museum is in-

debted for a very remarkable Chinese rosary of a hundred beads carved from exquisite dark-red Burmese amber, and in all probability manufactured in the imperial atelier. An interesting collection of Pompeian antiquities was purchased by the Museum. It represents a valuable addition to the Pompeian material and very well illustrates the agricultural phase and every-day life of the people in southern Italy toward the end of the first century. A Persian chain mail, acquired in Tiflis, was secured by purchase. The most important purchase of the year is represented by the models of Chinese pagodas and the wood-carved gateway made by the Orphan School of the celebrated Jesuit institution in Sikkawai near Shanghai and secured at the Panama-Pacific Exposition of San Francisco. The purchase of a small collection of incised pottery dug from shell-heaps in Walton County, Florida, is a welcome addition to the small quantity of material possessed by the Museum from this region. With funds provided by Mr. Homer E. Sargent, Mr. Cyrus H. McCormick and Mr. Martin A. Ryerson, a collection consisting of approximately one thousand objects, illustrating textiles, costume, jewelry, brass and bidri ware, religious images, and ivory carving, was secured by Dr. George A. Dorsey in India. This collection also includes an interesting series of miniature painting and notable old wood-carvings originating from a Jaina temple. Altogether it denotes a hopeful beginning in the direction of a collection representative of the high civilization of India and augurs well for the large opportunities offered in this immense field in which work on extensive lines may well be continued.

There were added to the Department of Botany during the year 19,831 sheets of herbarium specimens, comprising in part the following interesting and valuable series: Baker & Huber, Brazil 60; Botanical Garden, Natal 101; Botanical Garden, Sidney 99; Buchtien, Bolivia 200; Clokey, Illinois 145; Cowles, British Columbia 164; Alaska 468; Alberta 81, Saskatchewan 72, and Washington 491; Dusener, Illinois 292, Indiana 320; Elmer, Philippine Islands 865; Fendler, New Mexico 167; Gates, Philippine Islands 397; Gaumer, Yucatan 212; Heller, California 1044; Holm, Porto Rico 149; Johnson, Wisconsin 118; Lansing, Illinois 47, Indiana 128; Lindheimer, Texas 66; Meyer, Asia 47; Moodie, Alberta 195; Millspaugh, Wisconsin 84; Palmer, Mexico 381; Payson, Colorado 260; Philippine Bureau of Sciences 1367; Purpus, Mexico 227; Reynolds, Illinois 65, Wyoming 155, Yellowstone Park 75, Washington 151; Sherff, Illinois 214, Photographs of Bidens and Cosmos 671; Huron H. Smith, Oregon 53; Standley, New Mexico 176; U. S. Department of Agriculture, Gramineae 201; Wenzel, Philippine Islands 841; and Wright, New Mexico 182. In addition to the above, the organiza-

tion of the private herbaria purchased by the Museum was completed, and the specimens incorporated in the general herbarium. Of the 13,166 sheets so incorporated the following are notable: Baker, Colorado 534; Camp, Michigan and Ohio 549; Eggleston, Vermont 497; Fitzpatrick, Iowa 443; Graut, Vermont 388; Heller, California 998; Idaho 447; Pennsylvania 496; Sandwich Islands 938; Kearney, New Jersey and Tennessee 375; McDonald, Illinois 405; Mackenzie, Kansas and Missouri 308; Morris, Connecticut to Virginia 464; Nelson, Wyoming 442; Piper, Washington 268; Sandberg, Minnesota 248; Sheldon, Minnesota 204; Small, Virginia 224; Umbach, Illinois and Indiana 533; and Watson, Ohio 152. The private herbaria now incorporated with that of the Museum are the following:

Bebb, M. S., <i>Salix</i> and general	31,583
Heller, A. A., General	13,166
Hitchcock, A. S., <i>Floridian</i>	7,188
Millspaugh, C. F., <i>Euphorbia</i> and general	5,006
Patterson, H. N., General	37,887
Rothrock, J. T., General	22,901
Small, J. K., South U. S. and general	19,381
Schott, A., <i>Yucatan</i> and general	8,447
Schuette, J. H., <i>Wisconsin</i> and general	10,990
University of Chicago, General	44,104
Wahlstedt, J. H., <i>Epilobium</i> , <i>Viola</i> , <i>Chara</i> and general	17,555

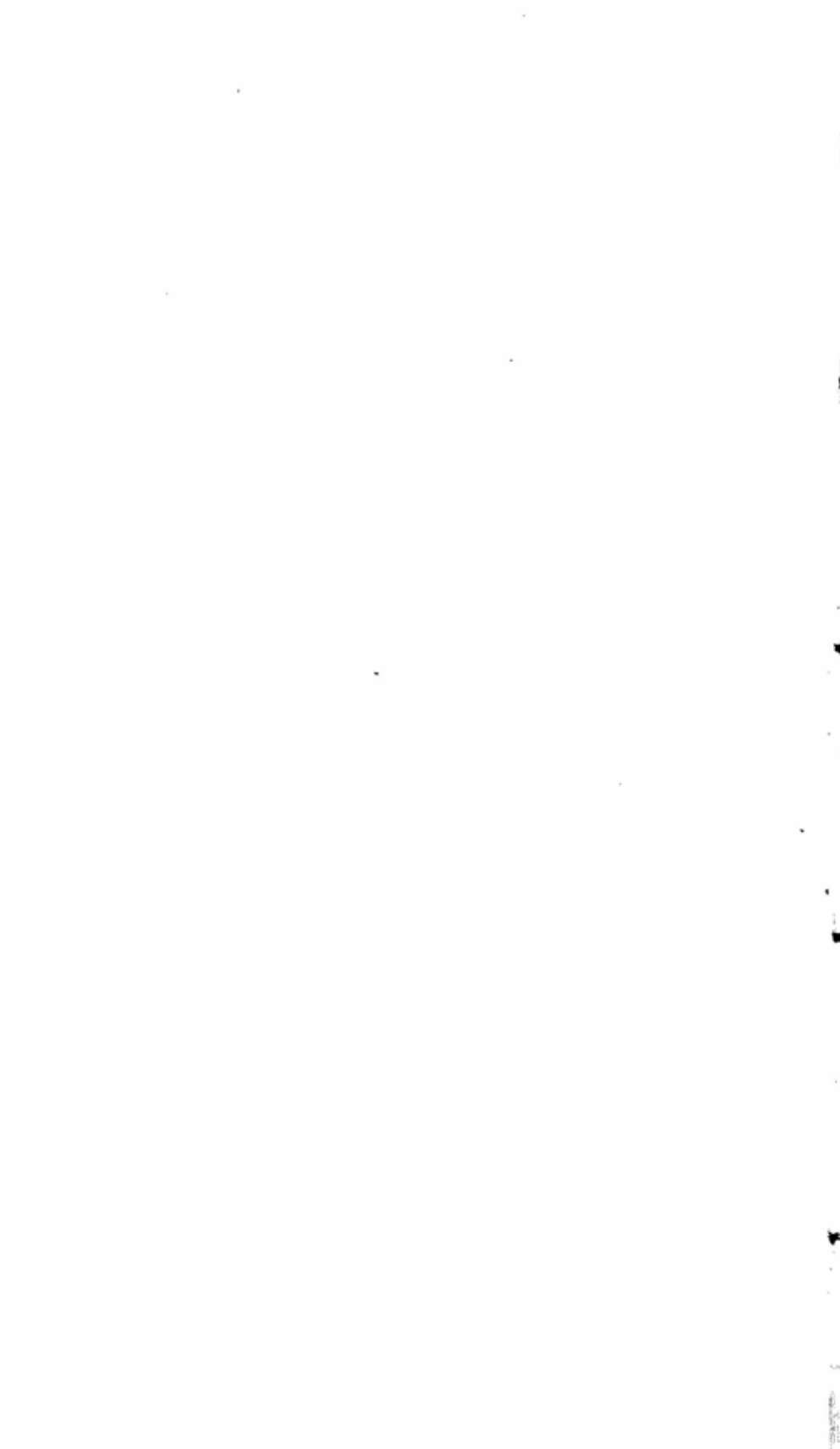
The additions to the organized herbarium during the year, geographically arranged, are as follows: (The tabulation does not include regions from which no additions have been received this year).

LOCALITY	Added to Herbarium 1915	Total now in Herbarium
ALASKA	473	1,162
CANADA:		
Alberta	277	828
British Columbia	165	1,182
Manitoba	1	259
New Brunswick	4	181
Saskatchewan	73	439
UNITED STATES:		
Alabama	127	1,464
Arizona	74	9,522
California	1,151	35,091
Carolina, North	213	4,787
Carolina, South	7	1,042
Colorado	346	12,133
Connecticut	24	579
Dakota, North	4	564
Dakota, South	83	1,176



IMPERIAL CHINESE JADE SEAL CONFERRED UPON THE EMPRESS JUI ON FEBRUARY 12, 1796.

Gift of Fritz von Frantzius.



LOCALITY	Added to Herbarium 1915	Total now in Herbarium
UNITED STATES:		
Delaware	1	1,594
District of Columbia	150	2,523
Florida	19	20,735
Florida Keys, General	1	682
Big Pine Key	1	3
Coon Key	1	1
Georgia	4	4,566
Idaho	219	3,479
Illinois	1,109	22,161
Indiana	760	6,668
Indian Territory	25	312
Iowa	39	1,801
Kansas	45	551
Kentucky	4	972
Louisiana	53	1,349
Maryland	118	1,225
Massachusetts	220	3,404
Michigan	173	4,176
Minnesota	812	2,411
Mississippi	1	2,079
Missouri	360	3,380
Montana	22	4,030
Nebraska	6	420
Nevada	17	1,273
New Hampshire	56	1,542
New Jersey	56	3,011
New Mexico	630	3,591
New York	296	6,353
Ohio	250	2,080
Oklahoma	3	294
Oregon	69	7,503
Pennsylvania	653	11,514
Rocky Mountains (General)	4	1,399
Tennessee	105	1,562
Texas	93	9,857
Utah	3	2,535
Vermont	1,014	3,689
Virginia	594	5,297
Washington	314	7,756
San Juan Island	151	151
Brown Island	1	11
West Virginia	7	2,010
Wisconsin	237	4,900
Wyoming	622	1,552
Yellowstone Park	75	528
CENTRAL AMERICA:		
Costa Rica	5	616
Guatemala	5	2,891

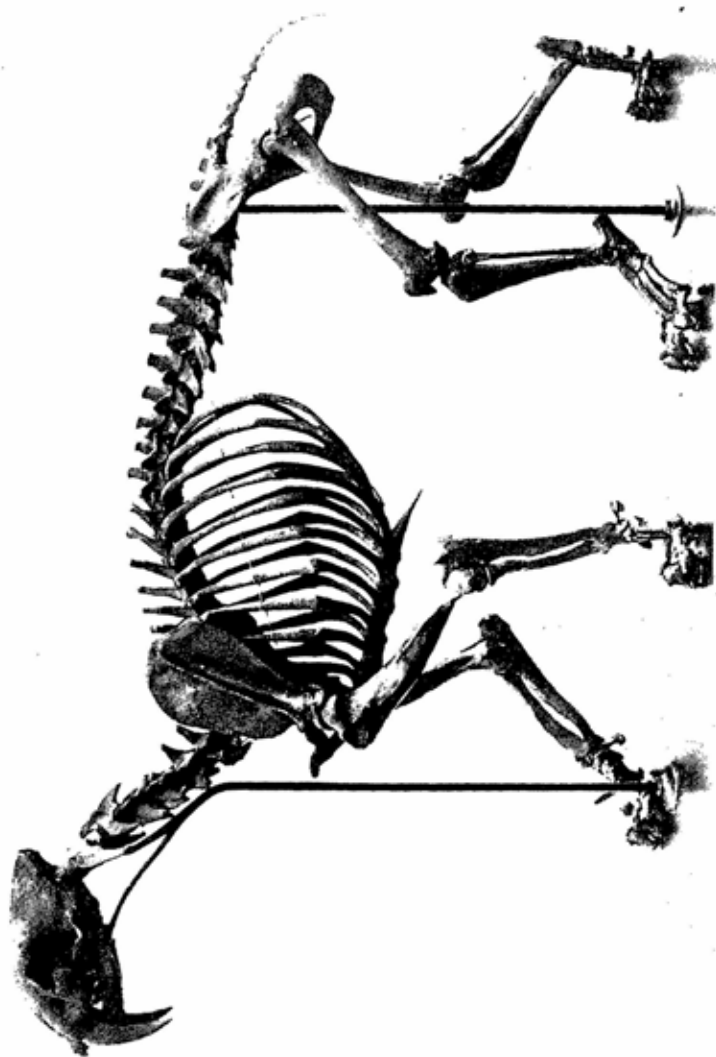
16 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

LOCALITY	Added to Herbarium 1915	Total now in Herbarium
CENTRAL AMERICA:		
Mexico	864	36,602
Lower California	18	1,682
Yucatan	212	4,903
PANAMA:		
Canal Zone	12	65
Taboga Island	1	1
San Salvador	1	25
WEST INDIES:		
Bahamas:		
New Providence	1	2,423
Barbados	3	340
Cuba	5	9,783
Isle of Pines	2	655
Guadeloupe	1	1,035
Hayti	4	309
Jamaica	12	7,400
Martinique	1	617
Porto Rico	167	4,753
San Jan, Little	1	8
Santo Domingo	2	1,381
Santa Lucia	1	2
Sombrero Island	1	1
SOUTH AMERICA:		
Bolivia	201	3,917
Brazil	60	573
Tobago	2	572
Trinidad	7	489
Venezuela	3	1,067
EUROPE:		
Austro-Hungary	316	7,383
England	1	682
ASIA:		
Borneo	2	10
China	46	370
Philippine Islands	3,467	9,909
Siberia	1	431
AFRICA:		
South Africa	34	1,293
Basutoland	3	3
Natal	44	794
Zululand	15	175
OCEANIA:		
AUSTRALIA:		
New South Wales	85	611
Queensland	6	24
West Australia	7	141
Guam	1	2
Fiji Islands	1	2

LOCALITY	Added to Herbarium 1915	Total now in Herbarium
OCEANIA:		
Samoa	1	63
Sandwich Islands, general . . . . .	..	484
Maui	1	1
Kauai	449	449
Oahu	541	541
Horticultural	21	2,671
Illustrations mounted as Herbarium sheets	678	1,923

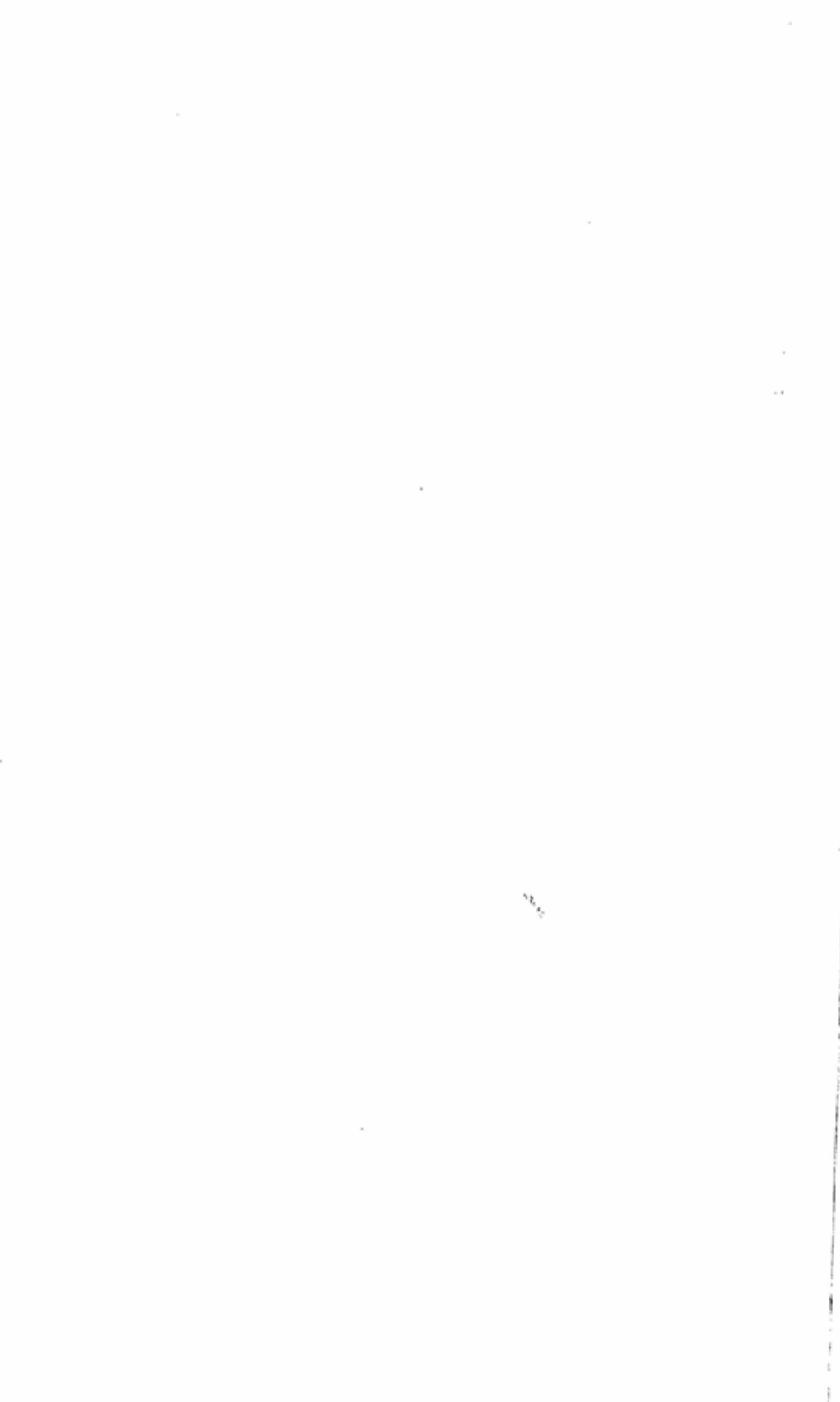
The most important accession in the Department of Geology was the gift of a large quantity of specimens of the fossil skeletons found in the asphalt beds of Los Angeles, California. This large collection was presented through the kindness of Mr. Edward E. Ayer, Mr. E. B. Butler, Mr. W. R. Linn, and Mr. Martin A. Ryerson. Among the important features of the collection was a complete mounted skeleton of the sabre-tooth tiger. This forms a striking and valuable addition to the series of fossils. An additional skeleton of this tiger, incomplete but mountable, was also included in the collection. An incomplete but mountable skeleton of the fossil wolf of the Los Angeles locality and in addition six good skulls and twelve lower jaws of the animal were also received. The large, extinct sloth found at this locality was represented by a skull nearly two feet in length, also by teeth and parts of lower jaws and some of the peculiar leg bones and claws of the animal. These will furnish a mounted limb. A large fossil lion of the locality, about twice as large as the largest African lion, is represented by several bones; a large camel, one-half larger than the largest modern camel, is represented by vertebrae and some other bones; and the native horse is represented by leg bones and teeth. There are also contained in the collection parts of four bird skulls, leg bones and claws, and probably one mountable foot. Some of these bones show birds of unusually large size. Bones of the mammoth and bison, the latter including one good bison skull, were also comprised in the collection. In addition a large quantity of miscellaneous bones of various species was included which will be valuable for purposes of comparison and possibly for completing skeletons. Two meteoric stones of the fall which occurred at Blanket, Texas, May 30, 1909, were presented through the kindness of Mr. Stanley Field and Mr. Arthur B. Jones. These stones represent all the known material of this fall and make a valuable addition to the meteorite collection. About 60 specimens of minerals and ores were presented by Mr. W. J. Chalmers. This series included a number of specimens of gold ores showing free gold, specimens of native silver, agate, turquoise and other valuable minerals. Fifteen specimens of jasper and moss agate, presented by Mr. J. H. Mosher of

Glendive, Montana, and several additional specimens of moss agate showing remarkable imitative landscape effects, loaned by him, furnish excellent specimens of a remarkable occurrence of this mineral. Mr. Fred Pattee contributed a number of specimens of ores and industrial minerals from various western localities. These gifts included ores of copper and vanadium, also specimens of phosphates, asbestos and barite. An interesting series of copper ores showing stages of replacement of hornblende by copper minerals was presented by Dr. F. C. Nicholas, also a valuable specimen of tungsten ore. A striking and valuable specimen of gold ore from the Smuggler-Union mine, Colorado, was presented by Mr. T. S. Chalmers. The India Geological Survey presented several specimens of Indian laterite, thus securing a representation of this peculiar mineral which had not hitherto been possessed. The representation of the Los Angeles fossil fauna was increased by the gift of 532 specimens by Dr. William Bebb. These specimens included several hundred bones of *Smilodon*, a large number of bones of the fossil wolf and some of the fossil horse, sloth and bison. The Colorado-Yule Marble Company presented six full-sized slabs showing the varieties of marble obtained at its quarries. The collection of fuller's earths and barites which had hitherto been quite incomplete, was increased by the gift of specimens from several firms producing these substances. Of these, fuller's earths were presented by the Manatee Fuller's Earth Corporation, the Floridin Company, J. E. and R. M. Farnsworth and the Lester Clay Company; and barite was presented by the Cherokee Chemical Company, Durex Chemical Works, Krebs Pigment and Chemical Company, and Thompson, Weinman and Company. Mr. H. R. Wood, the producer, presented four specimens of tungsten ore from Arizona, and C. K. Williams and Company three specimens of crude and ground talc. Nine specimens of iron ore from the unusual deposits that occur at Mayville, Wisconsin, were presented by Mr. E. S. O'Connor. Mr. Max Ziege presented 33 specimens of ores from the Ruby Mountain District, Nevada, which included copper, antimony and silver ores and accompanying rocks. Exchanges made with several individuals and institutions resulted in adding desirable material. The most important accession received in this way was obtained from the Deseret Museum, Salt Lake City, Utah, and consisted of fifteen specimens of the products of the Great Salt Lake, Utah, and fifteen brilliant and rare specimens of crystallized pyrite and tetrahedrite from Bingham, Utah. The Salt Lake products included brines, calcareous oölite, mirabilite and various forms of common salt, all obtained from the waters of the lake. A slab of the Big Skookum meteorite was obtained by partial exchange with



SKELETON OF FOSSIL SABER-TOOTH TIGER (*SMILODON CALIFORNICUS*). LOS ANGELES ASPHALT BEDS,
LOS ANGELES, CALIFORNIA.

Gift of Messrs. E. E. Ayer, E. B. Butler, W. R. Linn, and M. A. Ryerson.



the Foote Mineral Company. From Mr. H. B. Derr were obtained 37 specimens of analyzed soils, besides limestones and clays from various localities in Missouri. From Mr. William Foshag were obtained by exchange eight specimens of rare California minerals, and from Mr. E. G. Norton three specimens of crystallized calaverite from Cripple Creek, Colorado. The principal accession by purchase was a number of specimens of the rare Carboniferous crinoid *Phalocrinus*, which had not previously been represented in the collections. Specimens of tracks of a Carboniferous batrachian were included in the same accession.

In the Department of Zoology the number of accessions during the year were as follows: Birds 143; mammals 16; fishes 276; insects 923; and shells 432. Of these, 125 of the birds were an important purchase of Dutch Guiana birds from Mr. Penard; 152 Nicaraguan butterflies were obtained from Senor Dion. Chaves of Managua; 24 species of sphinx moths were presented to the Museum by Mr. B. Preston Clark of Boston, these with one or two exceptions being new to the Museum collection and some of them very rare; also 116 Bolivian insects secured by the Collins and Day expedition to South America. There was obtained by purchase a very interesting abnormal form of *Heliconius doris viridis*. Of the 276 fishes added to the collection 265 were the gift of Dr. C. Eigenmann and were desirable acquisitions. Of the 432 shells received, 255 from southwestern United States were the gift of Mr. R. C. Orcutt; 52 specimens from the Museum's South American Expedition, and 117 from the Joseph N. Field South Sea Islands Expedition.

EXPEDITIONS AND FIELD WORK.—Dr. George A. Dorsey, to whom leave of absence had been granted for a visit to the Orient, availed himself of the opportunity of his sojourn in India to acquire an ethnological collection for the Museum with funds provided through the generosity of Mr. Homer E. Sargent, Mr. Cyrus H. McCormick and Mr. Martin A. Ryerson. A description of the collection appears elsewhere in this report.

The discontinuance of the regular zoological expedition to South America was compensated for by participation in an expedition known as the Collins-Day South American Expedition, organized and financed by Mr. Alfred M. Collins of Philadelphia and Mr. Lee Garnett Day of New York City. This expedition included besides Mr. Collins and Mr. Day and their associate, Mr. W. T. Walker, two zoological collectors, one, Mr. R. H. Becker, representing the Museum, and the other, Mr. G. K. Cherrie, representing the American Museum of Natural History of New York. The entire expenses and salaries of the collectors were generously defrayed by Mr. Collins and Mr. Day and every opportunity was afforded for work with the result that, despite a

rainy season and a limited amount of time, some 1,300 specimens of birds and mammals were secured. By special agreement these will be divided equally between the two Museums. The expedition sailed from New York December 26, 1914, and proceeded via Panama to Mollendo, Peru. From there a short trip was made to the highlands near Lake Titicaca and specimens were obtained of the larger mammals of the region, especially the guanaco or wild llama, and the vicuña. It is of great interest to note, as illustrating the scant means available for studying South American animals, that these vicuñas were the first to be brought to a North American Museum, notwithstanding the fact that the species is of relatively large size and of great economic importance. The expedition continued through the Andes to Cochabamba, Bolivia. From Cochabamba it was decided to descend to the Madeira River and the Amazon by way of the Chapare and Mamore rivers instead of by the more frequented route via the Beni River. The difficult journey was made with a train of twenty-four pack mules at considerable expense of time, money and personal hardship. The remainder of the trip was by canoe and small steamer to the Madeira-Mamore railroad by which the rapids of the Madeira were passed and thence to the Amazon at Manaus where steamships of good size were available. The collection of mammals secured by the expedition has not yet been studied and the specimens of birds, which will ultimately come to this Museum, have not been received. In September and October, Taxidermist Friesser made a successful expedition to the Olympic Mountains of the State of Washington, where, through the courtesy of state officials, he was permitted to obtain fine specimens of the Olympic or Roosevelt Elk. These and the accessory material secured at the same time will be used for a large group of these animals, which has long been planned and for which a striking background has already been painted.

The following is a list of the expeditions:

Locality	Collector	Material
British India.	Geo. A. Dorsey.	Ethnology.
Olympic Mountains.	J. Friesser.	Mammals.
Peru, Bolivia and N. Brazil.	R. H. Becker	Mammals and Birds.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT.—The work and efficiency of the Department of Anthropology in matters of installation have been fully maintained during the year. A total of 68 new cases have been placed on permanent exhibition, many of these being completely labeled. The material installed in these cases is distributed as follows: Classical archæology 6 cases; Hopi ethnology 10 cases; Tibetan ethnology 18 cases; Chinese ethnology 8 cases; Chinese archæ-



FIGURE OF WOMAN FROM KUKUNOR REGION, IN FESTIVE COSTUME. FRONT AND BACK.

ology 11 cases; Japanese ethnology 1 case; New Caledonian ethnology 8 cases; Philippine ethnology 1 case; and Solomon Islands ethnology 5 cases. The 31 cases on the gallery relating to physical anthropology were relabeled and reinstalled; work on the cataloguing of the main collections in physical anthropology has likewise been commenced. Hall 49 has been installed with exhibits of the Mrs. T. B. Blackstone Expedition to Tibet. One group of the displays illustrates the life of the nomadic tribes of eastern Tibet, their saddlery and other means of transportation, utilization of skins, leather, and yak-hair weavings. A large coracle, the only type of boat used in Tibet, is a notable feature in these exhibits. For comparative study, Chinese saddlery is likewise shown in this section on the dummy of a horse, which is equipped with full harness. Another group of Tibetan exhibits, consisting of 7 cases, illustrates the manufacture of textiles, the process of weaving being shown by several looms, as well as the style and wear of costume. Sixteen life-size figures have been prepared with much care for faithfulness of all characteristic features. They are completely dressed in native style, even as regards the hair and hair-dressing procured in Tibet, and are thoroughly representative of the manifold tribes of central, eastern, and northeastern Tibet. A model of a woman from central Tibet is shown in festive attire complete with all jewelry. Special emphasis is laid upon the difference between the pastoral and sedentary or agricultural tribes, and upon the influence exerted upon Tibetan culture by China. In addition to the costumed figures, nine articles of clothing are exhibited on dummies, also many specimens of woollen and hempen fabrics. Jewelry from Tibet and China, formerly deposited in Higinbotham Hall, is now installed in three standard cases on slanting shelves covered with black velvet. The installation is well provided with photographs depicting the wearing of the jewelry. This installation presented technical difficulties of great complexity, all of which have been overcome. In December the three jewelry cases, also one from Hall 54, were moved to alcoves 121 and 122, North Court. Two cases containing Tibetan religious paintings were installed in Hall 49. The Chinese bronzes temporarily placed in the North Court were transferred to the East Annex and permanently installed in standard cases. They now occupy altogether eleven cases, and are arranged in strictly chronological order. In consequence of this addition, a reorganization of the Chinese Halls became necessary. The paintings were removed from Hall 43 and 44 to Hall 47 and replaced by nine cases of bronze. For technical reasons two cases of bronze have to remain in Hall 49. The interesting and instructive models of boats and palanquins, acquired at the World's Columbian Exposition, were permanently

installed in two standard cases placed in Hall 53, each model being provided with a descriptive label. The imperial jade book and jade seal presented by Mr. von Frantzius are temporarily installed in Hall 45, in such a manner that they can be freely viewed from all sides. The two detached jade tablets purchased a year ago were added to these exhibits. A special case was constructed for the large brass temple-lamp from India, secured during the time of the Columbian Exposition. The Japanese tapestry, formerly in Hall 31, was moved to Hall 56 into its appropriate surroundings. Mr. Ayer's gift of four Moro guns necessitated the reinstallation of two cases containing Moro armor. The New Caledonian collection, installed in eight cases by Assistant Curator Lewis, is especially interesting for its rare old masks and fine assortment of weapons, notably the stone-headed clubs, one of which is said to be the largest in existence, and was the property of one of the famous chiefs in New Caledonia. Other objects of significance are the house-posts and ornaments, native money, and the old-style clothing and ornaments, especially the green-stone necklaces representing the most highly prized treasures of a New-Caledonian woman. Five cases containing material from the Solomon Islands were also installed. The installation of the Stanley McCormick Hopi Collections has progressed satisfactorily, ten cases having been completed. Five of these cases comprise 150 masks and head-dresses, shown upon freshly painted plaster busts, in their proper groupings and sequence. Three cases are filled with modern domestic pottery, two of unpainted, one of painted ware, in their groupings, as recognized by the Hopi themselves. The series of fifty objects showing the manufacture of pottery is very complete and instructive. One case includes rattles of every type, in fact, all musical instruments used by the Hopi, except drums. In another case are displayed the rabbit sticks, raw skins, and the rabbit-skin robes which are purely woman's work, no man being allowed to be present during their making. In the North Court, three cases have been installed; namely one of Etruscan *Bucchero* ware variously decorated, another of vessels with red designs on black ground. The third is occupied by bronzes which include the two *cistas* purchased last year, all being obtained through the efforts of Mr. Ayer. These cases, newly installed, necessitated some rearrangement in which the two candelabra cases and one of bronze pails were moved to the east line of cases in the Court where the three cases of Irish art-work have stood for years. These had been placed previously in alcoves 121 and 122. Minor transfers of material have also been made in this Court. The two cases containing antique glass in the North Court have been reinstalled upon a new principle of open shelving

which fully exhibits the beauty of form, wonderful colors, and iridescence of these specimens. The Pompeiian collection secured by the Director in San Francisco is temporarily installed in a hanging wall-case in alcove 121, North Court, and is completely labeled. When alcove 120 was vacated to make room for exhibits of the N. W. Harris Public School Extension, the Roman mills, braziers, and other objects were rearranged in the Court as best as its crowded condition would permit. A portion of the ethnological material obtained by Dr. Dorsey in India through the liberality of Messrs. Homer E. Sargent, Cyrus H. McCormick, and Martin A. Ryerson, has been placed temporarily in two wall cases in alcove 122. In H. N. Higinbotham Hall there have been some changes in installation as well as rearrangement. Hanging-cases 21 and 22, on the South Wall, were stripped of Algerian jewelry, and in its stead was placed the Turkish, Armenian, Syrian, and Arabian jewelry, formerly in case 17, along with the Bulgarian jewelry from case 19. In the vacated space in case 19 were temporarily placed Tibetan charm-boxes and earrings. Tibetan jewelry, consisting of rings, bracelets, and hairpins, was also transferred from case 20 to case 19. The Algerian jewelry from cases 21 and 22, along with a more recent accession of the same material, was installed in the new case on the East Wall of the hall. Some Colombian gold objects were taken from the floor of case 24 and placed upon the floor of case 23. When the Tibetan jewelry was removed from cases 19 and 20 for permanent installation in Hall 49, a reinstallation of case 20 was made necessary. This installation brought about some rearrangement of cases, Nos. 17 and 18 being moved from the East Wall to the North Wall, bringing all the jewelry from India into a single group. Case 23 and a new case were moved into vacated space upon the East Wall. Since Hall 48, East Annex, utilized for several years past as a work-room, was needed for the further exhibition of the Mrs. T. B. Blackstone collections, the north end of Hall 71 was cleared of all ethnological material stored there and equipped as a work-room, being in close proximity to the vast Pacific Island collections yet to be installed and stored in the West Annex, there to await removal into the new building. To better condense the ethnological material in the south end of Hall 71, the Volk collection and other material intended for exchange, as well as the large model of the Ruins of Mitla, Mexico, have been placed in Hall 68, now to be utilized for general storage. Six cases, heavily loaded with storage material, were taken from Hall 71 and placed in Hall 72 for early installation. The two cases of stored Australian material now stand in Hall 80, having been moved there from Hall 72. The drums, previously stored in Halls 79 and 80, having been shifted to Hall 68; those

two halls, with cases placed to the best advantage, will afford parking for fifty cases of the Joseph N. Field Melanesian Collections to be installed. Preservation of material, photographing, and rearrangement have necessitated work in one hundred cases of the Department during the year. Hall 48 in the East Annex was originally intended to serve as a gallery of Chinese painting. In view of the new material expected soon from San Francisco, however, this plan has been abandoned, and the hall will be reserved for the reception of the pagodas and other new acquisitions. The former plaster-room has been divided by a partition-wall into two rooms.

The Department of Botany has installed 39 new case-units in the public exhibition series, while 17 others have been reinstalled and augmented with new and interesting material. Of these cases 15 were added to the Systematic Economic Series; 37 to the North American Forestry Series; and 4 to General Dendrology. To the North American Forestry Series monographs of the following trees were added: Red or Pencil Cedar, Mountain Pine, Pitch Pine, Chestnut Oak, Yellow Locust, Honey Locust, Cork Elm, Red Spruce, Red Ash, Butternut, Chestnut, Hop-Hornbeam, Fraser's Umbrella Tree, Cucumber Tree, Beech, Sourwood, Yellow Poplar, Pennsylvania Cherry, Fraser's Fir, Sweet Buckeye, Black Willow, Sweet Birch and Yellow Birch. To the Dendrologic Series was added a display, in four cases, of the woods of the Hawaiian Islands, representing, with fair sized specimens, the trees of the islands as described in the new work of Mr. Joseph F. Rock. To the Systematic Economic Series a case was added displaying the fruits, gums, and tan and dye barks belonging to the Combretum and Mangrove families; one with similar products derived from the Combretum and Spikenard families; two cases devoted to the derivatives of the Birch family; one to those of the Willow, Myrtle and Walnut families; two to the Walnut family alone; one additional to the Oak family; one to the Sapodilla family and one each to the Spurge and the Daisy families. On account of lack of cases and cramped quarters in the rooms devoted to the working herbarium, it became necessary to entirely reorganize the collections during the year. In order that the material most frequently consulted might be readily accessible the Eurasian and African material was removed from the organized herbarium and placed in a series of metal storage cans racked in the mounting room on the first gallery; and the West Indian, Central and South American specimens rearranged in like storage cans racked above the regular herbarium cases. This divides, temporarily, the organized reference collection into three parts. In all three the plants are fully arranged in the order of modern classification. While not so conveniently referable



MODEL OF A GOLD MINE. X $\frac{1}{6}$.



as when all like material is together, yet the collections are consistently available, until such time as they can be reassembled in the herbarium hall of the new Museum building.

In the Department of Geology a complete readjustment of the cases in Skiff Hall was made in order to give better lighting and grouping. Formerly the low cases had been arranged on one side of the hall and the high cases on the other, but as the amount of light obtained by this method of arrangement was insufficient, the cases have now been arranged so as to form a series of alcoves with the taller cases forming the sides of the alcoves and the lower ones occupying the center. The lighting by this arrangement is much more satisfactory. Six of these alcoves were placed on each side of the main passageway through the hall, the forming of these alcoves having required the readjustment of 56 cases. From most of these cases it was also necessary to entirely remove the specimens and reinstall them. In this connection the opportunity was improved to perfect the order of the specimens so as to bring related groups as close together as possible. The exterior woodwork of the cases was also entirely refinished. Space was found in the cases for several new series, among them being a series of bonanza silver ores from Mexico and a collection illustrating the nature and origin of certain "porphyry coppers." To the rare earths collection a radiograph was added made by exposing a lead object to the emanations from carnotite. This was installed with other radium ores as a means of showing the best method of detecting such ores. A portion of the collection of gold ores was removed to make room for a model of a gold mine constructed by the Assistant Curator. This model represents methods of working a small gold mine of medium richness in a vertical quartz vein six feet wide. The background and above-ground scenery were prepared from studies of Arizona landscapes from photographs made by the Curator. The model occupies a space of four by three feet with a depth of about six inches. It illustrates a mine worked by levels connected by a shaft. The ore is represented as a vein of quartz containing minute particles of free gold. At one side the vein is represented as intersected by another running from the front to the back of the model. The ground about this vein is supposed to be looser than at the side and a different method of timbering is illustrated. To illustrate the methods of removing the ore several stopes are shown as well as raises and winzes. Various features of mining equipment are also represented such as head frames, shaft house, tramways, ore cars, pump, etc. The scale of the model is five feet to the inch, and pains were taken to have it represent different features of a well managed mine as far as possible. In all parts of the economic collections

there has been a constant addition of new material in the form of single specimens or small groups. Room for these has for the most part been obtained by withdrawing older specimens from exhibition. Space for increase in the number of rare earths and tungsten ores was obtained by withdrawing a portion of the antimony collection from exhibition. A collection of rocks from German coal fields which was properly a part of the coal collections not now on exhibition was withdrawn and the space gained utilized for the display of three new collections more in harmony with adjacent exhibits. One of these is a collection of fuller's earths from the most important American localities; another is a series illustrating the raw materials, intermediate and final products of Portland cement; and the third collection is one giving a synopsis of the uses of quartz and quartz sands. In this collection numerous specimens show the more common occurrences of quartz; then the grades of quartz used for the more valuable products, such as prisms, lenses and blown quartz utensils; and a third section shows specimens of the poorer qualities of quartz used for more ordinary purposes and sands suited to many special uses. These collections were installed in Hall 35. By reinstallation and some crowding of specimens a much enlarged collection of barite has been accommodated in the space formerly devoted to fewer specimens of this mineral. To the collection illustrating products of coal tar, some of the better known medicinal substances made from it such as phenacitin and acetanilide have been added. In Higinbotham Hall all the specimens were removed from the four central gem cases, the cases lined with new white silk and the specimens reinstalled. This work was necessitated by the fact that the old linings had become worn and faded. New linings were also provided for the upper parts of these cases and shelves of finished glass supported by glass pillars were put in place of the rough shelves swinging on chains which had hitherto been used. A new series of moss agates and jaspers was installed and some other minor changes were made. In Alcove 105, leading to Higinbotham Hall, the collection numbering 163 specimens illustrating the varieties and occurrence of amber which was obtained last year was installed. This collection illustrates different forms and colors of crude amber, forms and colors of pressed amber or ambroid, carvings in amber, fossils found in amber, distillation products of amber, etc. The collection was installed on a series of glass shelves, each specimen being secured to an individual mahogany stand. In front of each specimen was placed a label secured by an individual clip. To the exhibition series of systematic minerals about fifty specimens of recent accessions were added. The series of Salt Lake products was

installed in a case with other salts in Hall 31. The fossil Carboniferous tree from Michigan obtained from the St. Louis Exposition was installed in Hall 33 in connection with other fossils from this period. The series of Carboniferous crinoids and batrachians acquired during the year was similarly installed. The work of mounting the invertebrate fossils upon tablets suitable for installation in floor cases was carried on during the year as opportunity permitted and about 300 specimens were so prepared. Practically all the Pleistocene invertebrate fossils have now been mounted in this way and some other series have been completed. The Pleistocene fossils prepared were installed temporarily in a case in Hall 33. Specimens chiefly of Pleistocene and Tertiary invertebrates which had been on exhibition were removed from two wall cases and the cases placed in position in Hall 35 to receive the skeleton of the sabre-tooth tiger and other important specimens of the large collection of vertebrate fossils from California presented by Messrs. Ayer, Butler, Linn and Ryerson. By use of these two cases it was possible to place a representative series of these fossils on exhibition. The specimens installed include a complete mounted skeleton of the sabre-tooth tiger, several skulls of the same species, several skulls and a large number of bones of the fossil wolf, skulls and limb bones of the ground sloth, limb bones of the mastodon and horse, skulls and other bones of the bison, and skulls and other bones of various vulture-like and other birds. In order to make room for the additional cases and secure a better grouping of the specimens, some readjustment of the large cases in the Hall was also made. The specimens of fossil elk skull and horns from Palos Park, Illinois, presented by Mr. H. H. Honink, were also installed in this Hall. In Hall 59 a disarticulated skeleton of the sabre-tooth tiger was installed in a table-case, with each bone labeled so that the anatomical features of the skeleton may be readily studied. In the laboratory of vertebrate palæontology a model of the jaws of the great Eocene shark *Carcharodon* was completed, pains being taken to have the anatomical details as nearly correct as possible. The jaws, as completed, have a width of over six feet and an opening of four feet. For the first row of teeth actual fossil specimens were used and for the succeeding rows casts of these. The modeling of the lines of the jaw was based on careful studies of modern sharks. By careful attention to all these details it is believed that the characters of the ancient shark jaw are reproduced with great fidelity in this model. Owing to lack of space the model has not been placed on exhibition but will be available for the new building. The mounting of the skeleton of the sabre-tooth tiger received from California was modified so as to

give greater rigidity and a more natural pose and it was placed upon a new base. A skull and jaws of the Miocene horse, *Parahippus*, were prepared for exhibition and the mounting of a skeleton of the Miocene camel *Oxydactylus* was nearly completed. The large collection of fossil bones from the Los Angeles asphalt beds, numbering nearly 3000 specimens, was taken to Whiting, Indiana, where, through the courtesy of the Standard Oil Company, complete facilities were provided for soaking the bones in naphtha and thus dissolving out the tarry material. This treatment of the specimens was necessary to avoid the slow exudation of the asphalt which experience had shown would otherwise occur and cause injury to the interiors of the cases. The generosity of the Standard Oil Company in this connection is gratefully acknowledged.

In the Department of Zoology the collection of mammals in alcohol has been overhauled and fully identified. The collections of birds, mammals and insects were disinfected. The skins of the large mammals stored in the basement of the Museum are now reasonably accessible; only little progress has been made in completing the tanning of such skins as still remain in a raw state, the skin dresser having been occupied the greater part of the year on fresh material. Three large groups of birds, provided by the Stanley Field Ornithology Fund, have been finished and placed on exhibition. They represent bird life in Tropical America. (1) Oil birds, *Steatornis caripensis*. This group shows breeding birds in a cave in which they live, and illustrates a form of bird life of great interest. The material for the group was secured by the Museum South American Expedition on the Island of Trinidad in 1914. (2) Group of Screamers and Scarlet Ibis. A striking and instructive group, also obtained by the Museum Expedition near Lake Maracaibo, Venezuela. This group contains specimens of both the curious Horned Screamer and Crested Screamer, together with a number of richly colored Scarlet Ibis, and forms one of the most attractive groups. (3) Group of American Flamingoes on their breeding ground on the Island of Great Inagua, Bahama Islands. The group shows 7 adult Flamingoes, with their peculiar cone-shaped nests, eggs, and two young birds in the nest. The painted background shows a continuation of the "rookery" which in the Inagua Colony numbered about 1,000 nests. The painted backgrounds of these groups greatly enhance their educational value, as the observer is able to become familiar with the natural environment of the species. During the year the taxidermists have been engaged in preparing an exhibition group of Alaska Moose, which is now nearly ready for installation. Considerable preliminary work has also been done on two other mammal groups, a group of



GROUP OF AMERICAN FLAMINGOES. *PHOENICOPTERUS RUBER* (LINN).
Scene, Great Inagua Island, Bahamas.



Olympic Elk and one of the Capybara and Jaguar. A small group of Thirteen-lined Ground Squirrels or "Striped Gophers" has been completed and is ready for installation. The exhibition collection of fishes was increased by the addition of a large sectional case containing on one side two large and eighteen small groups of Florida fishes, on the other side the same number of groups of fishes from California, the latter including very fine specimens of Salmon. A large group of Flying Fish is in course of preparation. The Wild Turkey group was improved by the substitution of a fine male bird for the younger one temporarily installed when the group was made. In the same way a rather small Canada Goose was removed from the Saskatchewan group and replaced by a fine large old bird. An Asiatic Elephant and a Giraffe, which through age and imperfection were undesirable for exhibition purposes, have been withdrawn and placed in storage to be sold or exchanged. Throughout the year the reinstallation of the shell exhibit has been carried on by Assistant Curator Gerhard and Preparator Liljeblad. Four of the new A-cases have been permanently installed, and two more filled temporarily with shells which were glued on tablets last year. In addition, enough shells have been remounted to fill three more cases, for two of which labels are ready. Installing the shells on individual shelves cannot be done so expeditiously as when the specimens are mounted on tablets, for which reason the work is consuming more time than was anticipated. In the division of Osteology 2 skeletons of Porpoise and 7 skulls were degreased at the Whiting degreasing plant; 8 skeletons of animals were prepared for the Osteological study collection and 4 skeletons were remounted; 367 skulls were prepared and cleaned for the Systematic study collection.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

—Early in May 1914, Mr. N. W. Harris offered to bear the expense of an exhibit at the Panama-Pacific International Exposition, of a number of cases, typical of those being circulated among the public schools of Chicago, under the auspices of The N. W. Harris Public School Extension of Field Museum of Natural History. This generous offer was approved by the Director and accepted by the President. The Curator was instructed to select such types of cases as would illustrate the nature and character of the work that was being devoted to Museum Extension. He was also instructed to make arrangements for suitable and adequate space for exhibiting the cases, to determine the architectural plans for the space, to make all arrangements for packing the cases and shipping same, and to depart for San Francisco in time to install the exhibit at the Exposition for the opening day, February 20th. Thirty-

four cases of natural history and economic subjects were selected and exhibited in the Palace of Education of the Exposition. The space allotted the exhibit, amounting to approximately 1300 square feet, was favorably and prominently located on three well traveled aisles. The exhibition of the cases was supplemented by motion pictures, illustrating the present and future Museum buildings, types of cases on standards, loading cases in delivery car, car leaving Museum, and arriving at school unloading cases, reception of cases in classroom, case on rack in classroom, pupils studying case in classroom and teacher using case as a means of teaching. These views were prefaced with an introduction on the cause and scope of the Museum Extension. The exhibit and the motion picture theatre were attended daily by large numbers of visitors, whose interests were manifested in many instances, by words of commendation for the work that is being carried on, and praise for the attractive physical features of the cases. Representatives of foreign and American institutions of learning made repeated careful and thorough examinations of the exhibit and enquiries as to methods of using the cases in schools. Japan, through its Commissioner General to the Exposition, requested several cases of economic subjects be sent to Tokyo for the purpose of studying them, with a view of introducing similar cases and the same system in the schools of Japan. Twenty-five thousand illustrated pamphlets describing in brief the Museum Extension, were circulated during the exposition period. Five thousand cards were mailed to educators of the United States and Canada inviting them to inspect the Museum exhibit at the Exposition. Doctor Maria Montessori, internationally known as an educator of children, said of this exhibit in an unsolicited letter.

"I admire very much the way in which nature is interpreted in this exhibit. The units attract the child's attention and do not teach errors.

"They truly represent nature. Besides, they have added value of permitting prolonged observation of the many details which in nature could only be seen in passing glimpses and to which it would be hard to attract the child's attention. The knowledge of these facts observed in this way makes the future observation of real nature more interesting to the child.

"I consider this collection a most desirable contribution to school work and education generally. I hope that more of these beautiful exhibits may be made."

In a competitive group this exhibit was awarded the grand prize, the highest award possible.

Many additional cases of various subjects were prepared during the year, bringing the total number of cases available for circula-

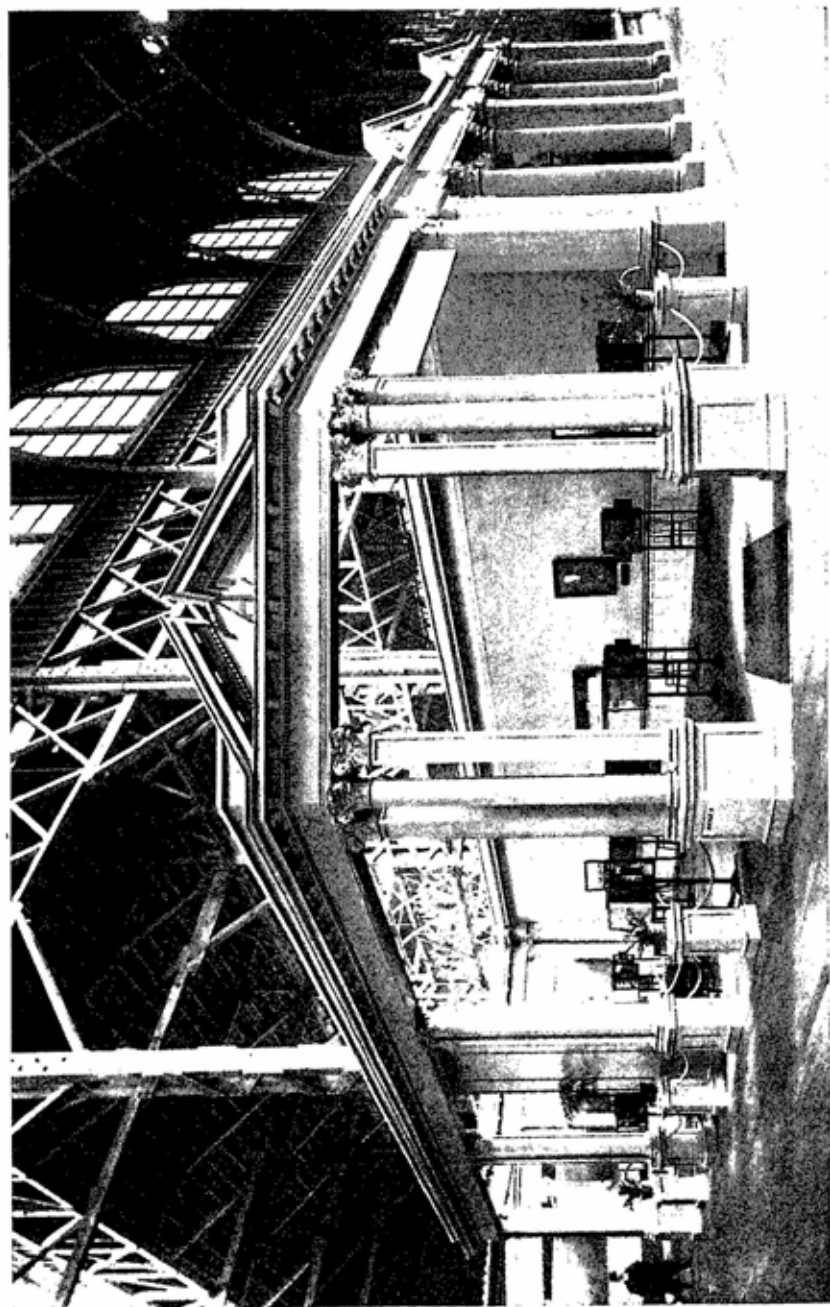


EXHIBIT OF THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION,
SAN FRANCISCO, 1915.



tion among the schools to about 390. While the weight of the delivery car is thought to be heavier than necessary, the designing of the carrying accommodations continues to meet with approval. It has a capacity of 45 cases. Requests for cases have been made by schools and community clubs in towns near Chicago. Delivery of cases was made to about 280 Main Schools. Each of these schools was provided with no less than 6 cases. The Board of Education continues to furnish to the classrooms, the standards upon which the cases are displayed for observation and study.

PHOTOGRAPHY AND ILLUSTRATION.—The following is a tabulation of the work performed in this Section:

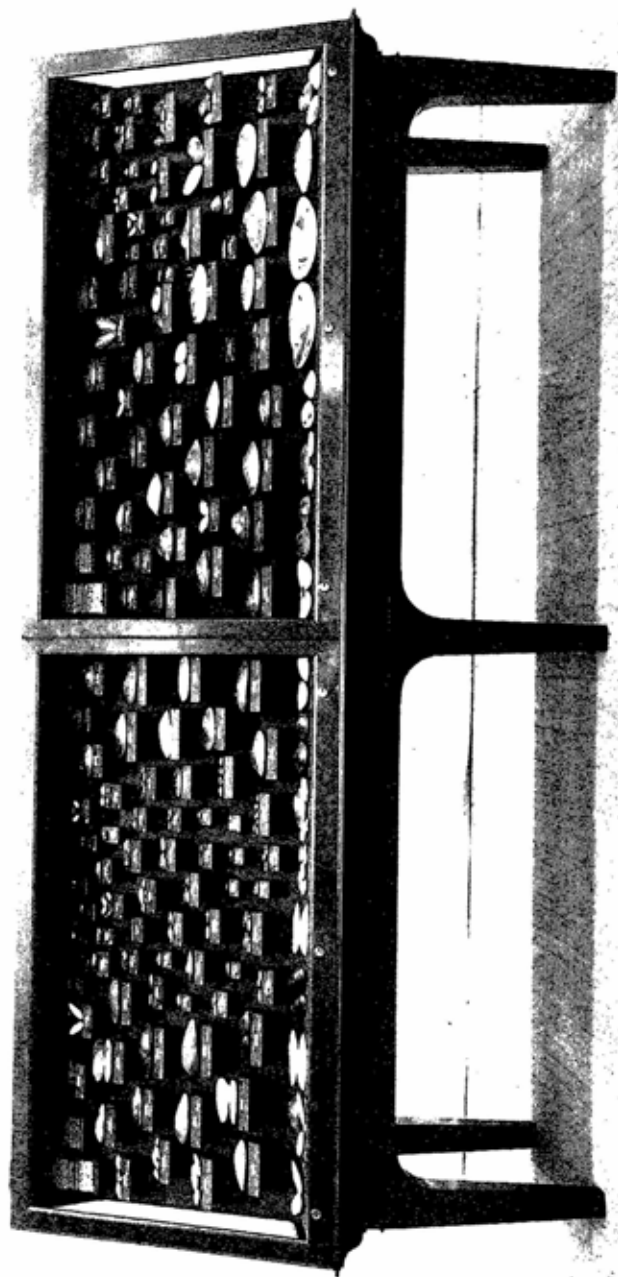
	Number of Negatives made	Number of Prints made	Number of Lantern Slides made	Number of Enlarge- ments made	Number of Negatives developed for Expe- ditions	Number of 6 1/2 x 8 3/4 Posi- tives made. Used in making large Negatives
General	12	200	..	..	..	..
Anthropology	352	175	..	8	..	8
Botany	5	399	2	..	..	..
Geology	14	101	2	..	..	..
Zoology	26	15	..	..	72	..
Harris Extension	33	5	..	..	..	..
Distribution . . . . .	..	165	..	..	..	..
Gift . . . . .	..	410	12	..	..	..
Sale	11	444	5	..	..	..
Totals	453	1,914	21	8	72	8
Total number of Catalogue entries during year 1915						2,476
Total number of Catalogue entries to December 31, 1915						113,303
Total number of Record Books						17

PRINTING.—The number of labels and other impressions made by the Section of Printing is as follows:

	Exhibition Labels	Other Impressions
Anthropology	2,624	23,335
Botany	1,065	22,950
Geology	1,954	....
Zoology	3,936	1,875
Library . . . . .	.....	7,225
General . . . . .	.....	35,709
N. W. Harris Public School Extension	566	950

ATTENDANCE.—The total attendance record for the year is 194,926. Appended is a list of the classes, consisting of twenty or more pupils, that visited the Museum during the term under review:

Schools and Locations.	Teachers	Pupils
Forestville School — Forty-fifth Street and St. Lawrence Avenue	1	25
St. Louis School — 11715 South State Street	1	24
Francis W. Parker — 6800 South State Street	6	38
University High School — Chicago, Illinois	1	21
McLaren — York and Laffin Streets	1	49
Lane Technical High School — Division and Sedgwick Streets	1	107
Colman — 4655 South Dearborn Street	3	42
University High School — Chicago, Illinois	1	20
University Elementary — Fifty-ninth Street and Kenwood Avenue	1	20
Chicago Academy of Fine Arts	2	80
Lowell — Hirsch Street and North Spaulding Avenue	1	30
St. Patrick's School — 2303 Park Avenue	3	42
St. Elizabeth's School — 13 East Forty-first Street	3	52
St. Catherine's School — 118th Street and Lowe Avenue	2	52
Illinois University — Urbana, Illinois	0	21
Morgan Park Prep. School — Morgan Park, Illinois	1	23
St. Ignatius Academy — 6835 Broadway	1	68
Parker School — 6800 South Stewart Avenue	1	32
Holy Trinity High School — South Lincoln and West Taylor Streets	2	27
Hessville Township School	1	28
Raymond School — Wabash Avenue and Thirty-sixth Place	1	38
University Elementary School — Fifty-ninth Street and Kenwood Avenue	2	22
Hyde Park High School — Sixty-second Street and Stony Island Avenue	2	115
University Elementary School — Fifty-ninth Street and Kenwood Avenue	3	20
St. Bridget's School — Archer Avenue Corner of Grady Court	1	30
Francis W. Parker — 6800 South Stewart Avenue	1	39
Gary School — Gary, Indiana	1	78
Brownell School — 6509 Perry Avenue	1	38
Norwood Park School — 5850 Hurlbut Street	1	23
Summer School — South Kildare Street and Colorado Avenue	1	33
Ray School — Fifty-seventh Street and Kimbark Avenue	1	32
Lewis Champlin School — Sixty-second Street and Stewart Avenue	2	23
Darwin School — Edgewood Avenue and Catalpa Court.	2	53
Willard School — Forty-ninth Street and St. Lawrence Avenue.	1	30
Curtis School — 115th Street and State Street	1	42
Gladstone School — Robey Street and Washburne Avenue	2	30
Cornell School — Seventy-fifth Street and Drexel Avenue	1	20
Holy Cross School — Sixty-fifth Street and Maryland Avenue	2	35
Spencer School — Park and Fiftieth Avenues	1	20
Goodrich School — Sangamon and Taylor Streets	1	25
Washburne School — Fourteenth between Jefferson and Union Streets	1	23
Poe School — Fulton and One Hundred Sixth Streets	2	30
Barnard School — Charles and One Hundred Fourth Streets	1	21
Scanlan School — Perry Avenue between 117th and 118th Streets	1	34



EXHIBITION CASE OF SHELLS.
Showing method of installation.

Schools and Locations		Teacher	Pupils
Winnetka School — Winnetka, Illinois		6	37
Zion Jewish School — 1261 South Halsted Street		1	35
Juvenile Protective League — Blackhawk and Noble Streets		0	22
Roseland Christian School — Roseland, Illinois		1	23
Madison School — Seventy-fifth Street and Dorchester Avenue		1	32
Goodrich School — Sangamon and Taylor Streets		3	45
Wendell Philipps High School — Thirty-ninth Street and Prairie Avenue		1	20
Englewood High School — Sixty-second Street and Stewart Avenue		1	44
Washington School — Morgan and Grand Avenues		1	54
Irving School — Lexington and South Leavitt Streets		1	33
Morgan Park High School — Morgan Park, Illinois		1	81
St. Andrews School — Hammond, Indiana		5	83
University Elementary — Fifty-ninth Street and Kenwood Avenue		2	23
University Elementary — Fifty-ninth Street and Kenwood Avenue		2	24
University High School — Chicago, Illinois		0	32
University of Chicago		0	52
University of Chicago		0	40
Horace Mann — Thirty-seventh Street and Princeton Avenue		6	37
Sullivan School — Eighty-third Street and Houston Avenue		1	27
John McLaren School — York and Laffin Streets		1	46
Dalton School — Dalton, Illinois		2	43
West Hammond School — Hammond, Indiana		1	20
University of Chicago		2	22
Flower High School — Twenty-sixth Street and South Wabash Avenue		1	30
Jewish Training School } 554 West Twelfth Place		1	35
Jewish Training School }		1	41
University High School — Chicago, Illinois		1	35
Pullman Manual Training School — Pullman, Illinois		1	25
Parker High School — Sixty-eighth Street and Stewart Avenue		1	47
Pullman Manual Training School — Pullman, Illinois		1	25
Bowen High School — Eighty-ninth Street and Manistee Avenue		0	23

Herewith are also submitted financial statements, list of accessions, names of members, etc., etc.

FREDERICK J. V. SKIFF, Director.

FINANCIAL STATEMENT

RECEIPTS AND DISBURSEMENTS

January 1, 1915, to December 31, 1915

RECEIPTS

Cash in Treasurer's hands, General Fund, December 31, 1914 . . .	\$10,828.95	
Cash in Treasurer's hands, New Exhibition Cases Fund, December 31, 1914	3,490.27	
Cash in Treasurer's hands, Endowment Sinking Fund, December 31, 1914	525.00	
Cash in Treasurer's hands, Picture Postal Cards, December 31, 1914 . . .	433.34	
Petty Cash on hand, December 31, 1914	739.95	
Dues of Life Members	1,000.00	
Dues of Annual Members	1,090.00	
Admissions and Check Rooms	5,418.75	
Sale of Guides	150.25	
South Park Commissioners	15,000.00	
Interest on Investments and Bank Balances	9,490.75	
Field Endowment Income	131,500.00	
Field Endowment Sinking Fund	500.00	
Field Endowment Sinking Fund Investments retired	315.00	
Field Endowment Sinking Fund Income	220.99	
New Exhibition Cases Fund Investments retired	7,070.00	
New Exhibition Cases Fund Income	620.88	
New Building Moving and Furnishing Fund Income	175.00	
Stanley Field Ornithology Fund	600.00	
H. W. Jackson Library Fund Income	58.28	
Donations:		
Martin A. Ryerson	\$1,250.00	
Homer E. Sargent	2,175.00	
Cyrus H. McCormick	1,000.00	
Fritz Von Frantzius	1,500.00	
Edward E. Ayer	250.00	
Edward B. Butler	250.00	
W. R. Linn	250.00	
Stanley Field	200.00	
Arthur B. Jones	200.00	7,075.00
Life Memberships Fund Income		409.94
Life Memberships Fund Investments retired		256.69
Sale of Picture Postal Cards		587.53
Sundry Receipts		71.60

\$197,628.17

DISBURSEMENTS

Salaries		\$70,511.91
Guard Service		11,955.87
Janitor Service		6,757.51
Fire Protection		4,306.72
Heat and Light		12,125.73
Repairs and Alterations:		
Wages — Carpenters, Painters, Roofers, etc.	\$7,715.41	
Materials used — lumber, paints, oils, glass, etc.	1,179.03	8,894.44
Furniture and Fixtures — Cases		10,263.44
The Library:		
Books and Periodicals	1,091.37	
Binding	588.71	
Sundries	89.05	1,769.13
Collections, etc., purchased		37,351.92
Installation expense		2,291.83
Expeditions		4,300.00
Publications		1,778.50
Sections of Photography and Printing — Supplies		353.68
General Expense Account:		
Freight, Expressage and Teaming	2,204.13	
Stationery, Postage and Telephones	747.45	
Liability Insurance	663.52	
Picture Postal Cards	645.27	
Sundries	889.95	5,150.32
Stanley Field Ornithology Fund		724.75
Woman's Temple Building Association — Foreclosure Expenses		2,407.18
H. W. Jackson Library Fund — Investments		68.70
New Building Moving and Furnishing Fund — Investments		7,245.00
Life Memberships Fund — Investments		1,666.63
Endowment Sinking Fund — Investments		1,509.26
Picture Postal Cards — Certificate of Deposit		375.60
In Treasurer's hands, December 31, 1915:		
General Fund	4,126.39	
New Exhibition Cases Fund	917.71	
Endowment Sinking Fund	36.00	5,080.10
Petty Cash on hand, December 31, 1915		739.95
		<u>\$197,628.17</u>

ATTENDANCE AND RECEIPTS FROM JANUARY 1 TO DECEMBER 31, 1915

ATTENDANCE.

Paid Attendance —		
Adults	18,582	
Children	2,210	20,792
Free Admission on Pay Days —		
School Children	4,296	
Students	3,043	
Teachers	498	
Members: Corporate	21	
Annual	12	
Life	5	
Officers' Families	74	
Special	109	
Press	12	8,070
Admissions on Free Days —		
Saturdays	42,223	
Sundays	123,841	166,064
Total Attendance		194,926
Highest Attendance on any one day (August 8, 1915) . .		7,057
Highest Paid Attendance on any one day (July 5, 1915) .		605
Average Daily Admissions (363 days)		536
Average Paid Attendance (260 days)		79

RECEIPTS.

Guides sold — 601 at 25 cents each	\$ 150.25
Articles checked — 11,045 at 5 cents each	552.25
Admissions	4,866.50
	<hr/>
	\$5,569.00

ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AYER, E. E., Chicago.

Collection of beads and shells found in grave, with two skeletons—
Leadbetter Landing, Benton Co., Tenn.

4 Moro bronze guns (lantaka).

161 chipped obsidian projectile points—Upper Lake, Lake County, Cal.

19 miniature Pomo baskets—Cal.

BAHR, PETER J., Shanghai, China.

6 archaic stone implements—Hupeh Province, China.

18 archaeological specimens of bone, stone, and bronze—Hupeh Province,
China.

BECKER, ROBERT H., Chicago.

1 grooved stone axe—La Paz, Bolivia.

2 pottery fragments — Ruins of Chanchan, Peru.

CARPENTER, MRS. H. I., Chicago.

18 miscellaneous ethnological objects, chiefly Alaska.

CHALMERS, W. J., Chicago.

Roman pottery lamp — Zalathna, Transylvania, Hungary.

Metal charm — Abyssinia.

21 African weapons.

1 Japanese temple gong.

DUNN, MRS. FRANK A., Milwaukee, Wis.

1 counterpane — Philadelphia, Pa.

EGYPTIAN EXPLORATION FUND.

Crystal eye set in copper, from a statue.

Piece of agate for inlaying.

2 fragments lapis lazuli from a jar.

1 lapis-lazuli bead.

EMMONS, LIEUT., G. F., Princeton, N. J.

1 graphite carving of whale — Alaska (exchange).

1 Chinese bronze figure (exchange).

FERNBACH, O. H., San Francisco, Cal.

Pre-Columbian celt of diabase — Quezaltenango, Guatemala.

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

Persian chain-mail, helmet with sword, arm-guard, hauberk, and
gauntlet.

15 pieces prehistoric pottery — Walton County, Fla.

1 pottery fragment — Walton County, Fla.

1 skull — Walton County, Fla.

57 Pompeian antiquities in bronze, iron, pottery, and glass — Pompeii.

FISHER, MRS. H. S., Chicago.

Sandstone disc — Ponca Indians, Neb.

FRANTZIUS, FRITZ VON, Chicago.

Collection of Japanese coins, originals and reproductions, made by order of the Japanese Government, complete set consisting of 747 (more or less) metal coins, 31 pieces of paper money, and 5 implements, all mounted and labeled in Japanese, on 50 wooden plates — Tokyo, Japan.

1 imperial jade seal — Peking, China.

1 imperial jade book — Peking, China.

1 gold ring — China.

GUNSAULUS, DR. FRANK W., Chicago.

Rosary of a hundred Burmese amber beads — Peking, China.

HACKETT, E. F., Albany, New York.

2 ancient Chinese bronze coins — third century B. C.

MCCORMICK, CYRUS H.; RYERSON, MARTIN A.; SARGENT, HOMER E., Chicago.

General ethnological collection: carvings, textiles, brass, jewelry, etc. — India. Collected by Geo. A. Dorsey.

SARGENT, HOMER E., Chicago.

2 old Navajo blankets.

SMITH, MRS. CAROLINE, Chicago.

4 carved wood images — Congo, Africa.

1 mask — Congo, Africa.

1 small fragment from a tomb — Luxor, Egypt.

SPRAGUE, A. A., 2d, Chicago.

1 Navajo blanket — Southwest, U. S. A.

SUMNER, REV. W. T., Chicago.

1 prehistoric pottery jar — Arizona.

TEASON, WILLIAM, Palos Park, Ill.

1 prehistoric chert arrowhead — Palos Park, Ill.

DEPARTMENT OF BOTANY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ARMOUR, ALLISON V., New York, and MILLSPAUGH C. F., Chicago.

12 herbarium specimens — Yucatan and Mexico.

BALL, CARLETON R., Washington, D. C.

3 herbarium specimens — La.

BEBB, HERBERT, Chicago.

4 herbarium specimens — Ill. and Ohio.

1 herbarium specimen — Ill.

BOTANICAL GARDENS, Sydney, N. S. W.

99 herbarium specimens — New South Wales, etc. (exchange).

BOYD, D. H., Whiting, Ind.

1 herbarium specimen — Ind.

BUREAU OF SCIENCE, Manila, P. I.

1367 herbarium specimens (exchange).

CHALMERS, W. J., Chicago.

1 blackthorn shillelagh — Ireland.

CLOKEY, IRA W., Decatur, Ill.

147 herbarium specimens — Mass., Saskatchewan, and Ill. (exchange).

COKER, W. C., Chapel Hill, N. C.

1 herbarium specimen — S. C.

COPULOS, MILTON D., Chicago.

Wax reproduction of garden cucumber.

CORY, MRS. CHAS. B., Chicago.

5 herbarium specimens — Ill.

COWLES, HENRY C., Chicago.

1 herbarium specimen — Ill.

CURLEY, F. E. A., St. Louis, Mo.

1 Philippine sugar mill — St. Louis Exposition.

DENSLOW, H. M., New York City.

18 herbarium specimens — Vermont, New Jersey, and New York.

FIELD MUSEUM OF NATURAL HISTORY.

Collated by C. F. Millspaugh:

651 herbarium specimens — various localities.

Collected by O. E. Lansing, Jr.:

17 herbarium specimens — Palos Park, Ill.

151 herbarium specimens — Lake Chicago Basin.

Purchases:

689 herbarium specimens — Leyte, P. I.

195 herbarium specimens — Alberta, Canada.

608 herbarium specimens — Mexico.

149 herbarium specimens — Porto Rico.

109 native woods — Sandwich Islands.

200 herbarium specimens — Bolivia.

260 herbarium specimens — Colo.

397 herbarium specimens — Philippine Islands.

1044 herbarium specimens — Cal.

GAUMER, DR. G. F., Yucatan, Mexico.

41 herbarium specimens — Yucatan.

GRAY, HERBARIUM, Cambridge, Mass. (exchange).

1 herbarium specimen — Mexico.

415 herbarium specimens — Texas and New Mexico.

HALL, H. M., Berkeley, Cal.

1 herbarium specimen — Cal.

HERBARIUM BOISSIER, Geneva, Switzerland.

60 herbarium specimens — Brazil (exchange).

HUTCHINSON, MRS. CHAS. L., Lake Geneva, Wis.

1 herbarium specimen — Wis.

JOHNSON, FRANK W., Chicago.

118 herbarium specimens — Wis.

KEW HERBARIUM, London, England.

2 herbarium specimens West Indian boxwood — Venezuela.

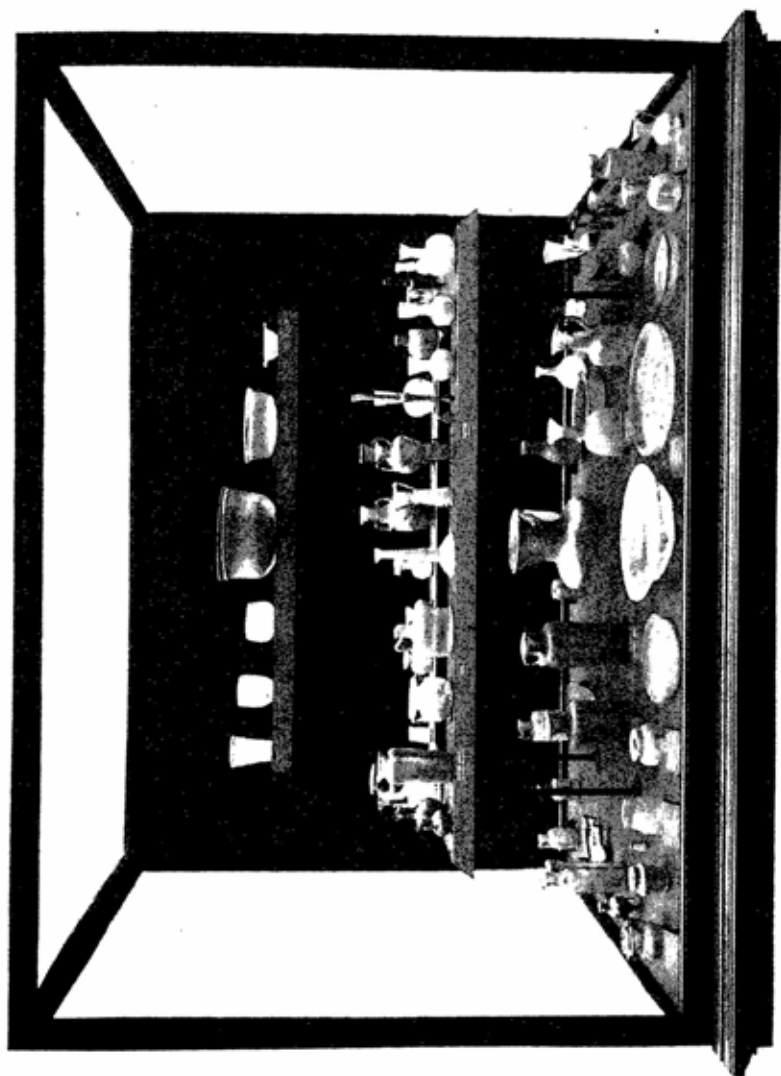
KING, MISS ANNA, Chicago.

3 herbarium specimens — Mich. and Ill.

KNUDSON, PEDER, Ephraim, Wis.

1 specimen beech nuts — Ephraim, Wis.

- KUSSNER, ALBERT, Chicago.
1 old spinning wheel.
- LANSING, O. E., JR., Chicago.
1 weathered root — Ind.
- LOEB, JACOB A., Chicago.
24 herbarium specimens — New York.
- MANCHESTER MUSEUM, Manchester, England.
1 blackthorn shillelagh — Ireland.
2 masses Kelp potash — Ireland.
- MILLSAUGH, C. F., Chicago.
Wax reproduction of Japanese persimmon and of sassafras fruits.
2 herbarium specimens — Chicago.
84 herbarium specimens — Ephraim, Wis.
- MOYER, LYCURGUS R., Montevideo, Minn.
30 herbarium specimens — various localities.
- MUSSELMAN, V. G., Quincy, Ill.
2 specimens fungi — Ill.
- NATAL BOTANICAL GARDEN, Berea, Natal.
101 herbarium specimens — South Africa (exchange).
- NEW YORK BOTANICAL GARDEN, Bronx Park, New York City.
6 photographs of Wright's Cuban Coccolobi (exchange).
4 herbarium specimens — Porto Rico (exchange).
- OWEN, C. L., Chicago.
2 herbarium specimens — Ariz.
- PADILLA, SR. SISTO ALBERTO, El Salvador, San Salvador.
1 bundle grass — El Salvador.
- PARISH, S. B., San Bernardino, Cal.
10 herbarium specimens — Nev. and Cal.
- PARKE, DAVIS & COMPANY, New York.
1 herbarium specimen — Yucatan.
- PFEIFFER, MISS NORMA E., Chicago.
1 type specimen *Thismia americana* — Ill.
- SHERFF, EARL E., Chicago.
1 herbarium specimen — France.
672 photographs of type sheets of *Bidens* and *Cosmos*.
232 herbarium specimens — Ill. and Ind.
- SMITH, HURON H., Portland, Oregon.
53 herbarium specimens — Oregon.
- TYRELL, E. R., Chicago.
1 fungus — Chicago.
1 fungus *Crucibulum vulgare* — Chicago.
- U. S. DEPT. OF AGRICULTURE, Washington, D. C.
47 herbarium specimens — Siberia and China (exchange).
- U. S. NATIONAL HERBARIUM, Washington, D. C.
228 herbarium specimens (exchange).
201 herbarium specimens of grasses (exchange).
- UNIVERSITY OF CALIFORNIA, Berkeley, Cal.
2 portions of type plants — Mexico.
- WILBER, MARSHALL D., Chicago.
4 specimens Malayan plantation rubber.



A CASE OF ANTIQUE GLASS IN NORTH COURT.
Showing new method of shelf installation.



DEPARTMENT OF GEOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ALEXANDER, W. B., Scales Mound, Ill.

3 specimens vanadinite — Tucson, Ariz.

AYER, E. E.; BUTLER, E. B.; LINN, W. R.; RYERSON, M. A., Chicago.

2111 specimens fossil vertebrates — Rancho La Brea, Cal.

BAEKELAND, DR. L. H., Yonkers, New York.

1 specimen bakelite.

BAILEY, DR. E. S., Chicago.

2 specimens glass colored by mesothorium.

BEBB, DR. WM., Chicago.

532 specimens bones of fossil vertebrates — Rancho La Brea, Cal.

BRADFORD, PERRY, Centerton, Ind.

5 specimens sapphire — Centerton, Ind.

BRITISH COMMISSION, LOUISIANA PURCHASE EXPOSITION, St. Louis, Mo.

1 specimen magnesite — India.

1 specimen manganese ore — India.

BROWN, MRS. A. S., East Stoneham, Maine.

1 feldspar crystal — East Stoneham, Maine.

CHALMERS, THOS. S., Chicago.

1 specimen gold ore — Smuggler-Union Mine, Telluride, Colo.

CHALMERS, WM. J., Chicago.

60 specimens minerals and ores — various localities.

1 specimen silver-lead ore — Kellogg, Idaho.

2 specimens gold — West Coast of Africa.

CHEROKEE CHEMICAL CO., Kings Creek, S. C.

2 specimens barite — Kings Creek, S. C.

COLORADO-YULE MARBLE CO., Marble, Colo.

6 polished slabs Colorado-Yule marble — Marble, Colo.

DERR, H. B., Sikeston, Mo.

3 specimens St. Peter sandstone — Utica, Ill. (exchange).

1 specimen molding sand — Utica, Ill. (exchange).

1 specimen furnace sand — Utica, Ill. (exchange).

30 specimens soils, ochers, clays, etc. — Missouri (exchange).

DESERET MUSEUM, Salt Lake City, Utah.

15 specimens tetrahedrite and pyrite — Bingham, Utah (exchange).

15 specimens products of Great Salt Lake — Great Salt Lake, Utah (exchange).

DUREX CHEMICAL WORKS, New York City.

1 specimen barite — Sweetwater, Tenn.

FARNSWORTH, J. E. and R. M., Lancaster, Mass.

1 specimen fuller's earth — Lancaster, Mass.

FIELD, STANLEY, and JONES, ARTHUR B., Chicago.

2 meteorites — Blanket, Texas.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by O. C. Farrington:

3 specimens granite — Pike's Peak, Colo.

6 specimens gypsum — Garden of the Gods, Colo.

Collected by H. W. Nichols:

5 specimens ores, rocks and fossils — Stony Creek, Granite Co., Mont.

Made in the Departmental laboratories:

1 mine model.

Purchases:

3 specimens volcanic bombs — Idaho.

4 specimens sand-faceted pebbles — Cape Cod, Mass.

5 specimens gold ore — Cripple Creek, Colo.

17 specimens crinoids and other fossils — Kansas City, Mo.

1 specimen Big Skookum meteorite — Yukon Dist., Alaska.

FISHER, MRS. H. S., Chicago.

41 specimens minerals and fossils — various localities.

FLORIDIN CO., Warren, Pa.

6 specimens crude and ground fuller's earth — Quincy, Fla.

FOSHAG, WM., Berkeley, Cal.

8 specimens minerals — Riverside, Cal. (exchange).

GEOLOGICAL SURVEY OF INDIA, Calcutta, India.

3 specimens laterite — Kalahandi, India.

GREEN, JAMES A., Chicago.

1 fossil elk antler — Palos Park, Ill.

1 portion deer antler — Palos Park, Ill.

HANINK, H. H., Palos Park, Ill.

1 fossil elk skull with antlers — Palos Park, Ill.

JEWELL, FRED, Osborne, Kan.

6 specimens fossils — Harian, Kan.

KRANTZ, DR. F., Bonn, Germany.

1 specimen fossil lizard — Solenhofen, Germany (exchange).

KREBS PIGMENT AND CHEMICAL CO., Newport, Del.

2 specimens barite — Cartersville, Ga.

LESTER CLAY CO., Jacksonville, Fla.

1 specimen each ground and raw fuller's earth — Attapulugus, Ga.

MALLINCKRODT CHEMICAL WORKS, St. Louis, Mo.

1 specimen acetanilide.

1 specimen acetphenetidin.

MANATEE FULLER'S EARTH CORPORATION, Ellenton, Fla.

5 specimens fuller's earth — Ellenton, Fla.

MARSH, C. H., Marshfield, Ore.

3 specimens ores — Ore.

1 specimen natrolite — Myrtle Point, Ore.

MINING MUSEUM, Sydney, New South Wales.

1 print etching figures of Delegate meteorite.

MOSHER, J. H., Glendive, Mont.

8 specimens jasper (cut).

4 specimens agatized wood (cut).

2 specimens moss agate (cut).

1 specimen moss agate pebble (polished).

13 specimens moss agate and jasper — Glendive, Mont. (loan).

NICHOLAS, FRANCIS C., Tucson, Ariz.

1 specimen tungsten ore — Las Guijas, Ariz.

9 specimens copper ores — Nogales, Ariz.

NORTON, E. G., Chicago.

3 specimens calaverite — Cripple Creek, Colo. (exchange).

O'CONNOR, E. S., Mayville, Wis.

9 specimens iron ore — Mayville, Wis.

PATTEE, FRED, Chicago.

6 specimens rock phosphate — Cokeville, Wyo.

1 specimen argillaceous chalk — Cheyenne, Wyo.

1 specimen conglomerate — Cheyenne, Wyo.

25 specimens asbestos, gold and copper ores, etc.— various localities.

9 specimens copper ore — Globe, Ariz.

15 specimens vanadium ore — Globe, Ariz.

3 specimens barite — Wyo.

3 specimens gold, silver, copper and manganese ores — Ariz. and Wyo.

PENNSYLVANIA SALT MFG. CO., Natrona, Pa.

1 specimen pyrite — Rio Tinto, Spain.

PIERCE, FRANKLIN, Chicago.

1 specimen eroded quartz — Adamana, Ariz. (loan).

ROSENBAUM, RUDOLPH R., Chicago.

2 specimens grahamite — Sardis, Okla.

1 specimen impsonite — Sardis, Okla.

ROSS, D. M., Etna, Wyo.

1 specimen fossil crinoids — Etna, Wyo.

SCHALL, GEO., Chicago.

1 specimen schist — Chicago.

SCOTT, GEO. S., New York City.

1 specimen psittacinite — Bisbee, Ariz. (exchange).

TEASON, WM., Palos Park, Ill.

14 specimens trilobites and other fossils — Palos Park, Ill.

3 specimens marcasite concretions — Palos Park, Ill.

THOMPSON, WEINMAN & CO., Nicholasville, Ky.

1 specimen barite — Nicholasville, Ky.

TOWER, RAY J., Greenville, Mich.

1 specimen core sand — Greenville, Mich.

1 specimen core — Greenville, Mich.

WILEY, JOHN, Florissant, Colo.

1 specimen petrified wood — Florissant, Colo.

WILLIAMS, C. K. COMPANY, Easton, Pa.

1 specimen talc — Easton, Pa.

2 specimens ground talc — Easton, Pa.

WOOD, H. R., Prescott, Ariz.

4 specimens tungsten ore — Maricopa Co., Ariz.

ZIEGE, MAX E., Joy, Nevada.

33 specimens ores — Ruby Mountain Dist., Nevada.

DEPARTMENT OF ZOÖLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AMERICAN MUSEUM OF NATURAL HISTORY, Central Park, New York City.

2 young flamingoes (exchange).

ARMSTRONG, EDWARD E., Chicago.

1 silver haired bat.

BATY, W. L., South Butte, Mont.

2 flying squirrels — South Butte, Mont.

2 American magpies — South Butte, Mont.

CLAFLIN, B. A., Green Bay, Wis.

1 abnormal domestic duck — Green Bay, Wis.

CLARK, B. PRESTON, Boston, Mass.

24 species hawk-moths.

CURLEY, F. E. A., St. Louis, Mo.

2 jaw bones of whale.

DOUBLER, L., Chicago.

1 ensign fly — Chicago.

1 beetle — Ft. Jennings, Ohio.

EIGENMANN, C. H., Bloomington, Ind.

265 fishes (43 species) — Colombia and Ecuador.

FIELD STANLEY, Chicago.

6 scarlet ibis — Miritiba, Brazil.

109 bird skins — Dutch Guiana.

1 flamingo — Fla.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by R. H. Becker:

1 cockroach — Trinidad, S. A.

Collected by W. J. Gerhard:

87 dragon-flies, grasshoppers, bugs, butterflies, moths, beetles, flies,
bees, wasps and parasites—N. Ind. and Ill.

Collected by J. Friesser:

7 mammals — Wash.

1 beetle — Wash.

Collected by A. B. Lewis:

105 shells — Bismarck Archipelago.

12 shells — Malekula, New Hebrides.

Collected by W. H. Osgood:

50 shells — La Vina, Peru.

2 shells — Balsas, Peru.

Purchases:

1 Alaskan moose — Kenai Peninsula, Alaska.

1 butterfly — Muzo, Colombia.

1 passenger pigeon.

5 frogs — Brownsville, Texas.

8 shells — Brownsville, Texas.

3 passenger pigeons — New York.

1 Eskimo curlew — Canada.

FRIESSER, JULIUS, Chicago.

1 snowy owl — Chicago.

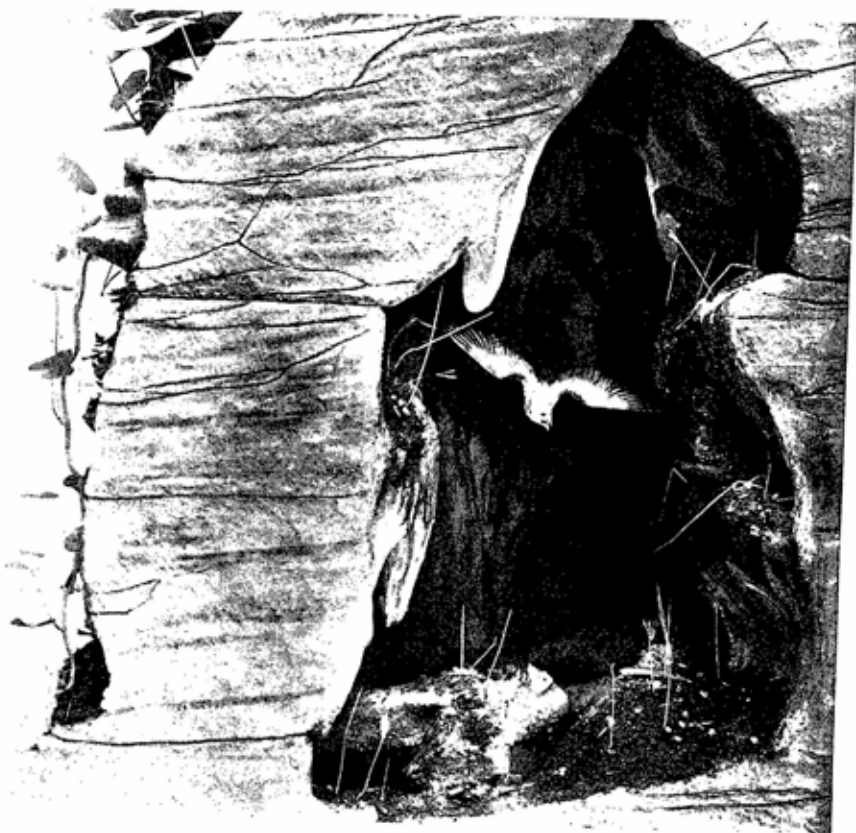
1 wild turkey egg.

GILL, DR. GEO. M., Lebanon, Tenn.

2 beetles — Lebanon, Tenn.

1 horned corydalis — Lebanon, Tenn.

9 parasites—Lebanon, Tenn.



GROUP OF OIL BIRDS. *STEATORNIS CARIPENSIS* (HUMBOLD)
Scene, section of cave, Trinidad Island, W. I.

- HENN, A. W., Bloomington, Ind.
1 deer skull — Ecuador.
1 agouti skull — Colombia.
1 rabbit skull — Ecuador.
1 pair deer horns — Colombia.
- HALL, CATHERINE J. and MARTHA O., Chicago.
1 parrot.
- HEIMSTREET, DR. THOS. B., Troy, New York.
1 long-billed curlew—Canada.
- LILJEBLAD, E., Chicago.
27 cicadas, flies, beetles, wasps, parasites, etc. — Ind. and Ill.
- LINCOLN PARK ZOO, Chicago.
1 orang-outang (in flesh).
- ORCUTT, C. R., San Diego, Cal.
255 shells — Cal., Texas, and Mexico.
- PRAY, LEON L., Chicago.
1 calico bass — Jackson Park Lagoon, Chicago.
- RODWAY, J., Georgetown, British Guiana.
2 South American sparrow hawks (exchange).
- ROMANO, JOE, Chicago.
2 pigeons — Jackson Park, Chicago.
1 English sparrow — Jackson Park, Chicago.
- SEWARD, MRS. EMMA MAY, Chicago.
1 saw-fish — Ft. Meyers, Fla.
1 alligator (spoiled) — Ft. Meyers, Fla.
- SIEGEL, COOPER & CO., Chicago.
1 lemur—Madagascar.
- SMITH, HURON H., Ingalls, Ind.
1 red-shouldered hawk — Ingalls, Ind.
- STODDARD, H. L., Chicago.
5 bird lice — Dune Park, Ind.
2 louse-flies — Hyde Ridge, Ill.
- UMBACH, L. M., Naperville, Ill.
10 bugs — Naperville, Ill.
- VOOGDT, CAPT.
1 emu egg — New Guinea (exchange).
- WELCH, WILLIAM, Chicago.
1 lamprey — Jackson Park Lagoon, Chicago.
- WELD, L. W., Evanston, Ill.
4 gall insects — State of Michoacan, Mexico.
3 gall insect guests — State of Michoacan, Mexico.
- WESTCOTT, DR. O. S., Oak Park, Ill.
2 jumping plant-lice.
8 dragon-flies — Ill., Fla., Cal., Mexico, and British Guiana.
- WICKER, MISS CAROLYN, Chicago.
1 mounted ruff of a bustard — India.
- WICKHAM, H. F., Iowa City, Iowa.
3 moths — Koehler, N. M.

WILLIAMSON, E. B., Bluffton, Ind.

3 red-tailed hawks — Bluffton, Ind.

1 loon — Bluffton, Ind.

1 barn owl — Bluffton, Ind.

WOLCOTT, A. B., Chicago.

4 salamanders — Mineral Springs, Ind.

18 dragon-flies, bugs, beetles, flies, moths and wasps — Northern Illinois.

SECTION OF PHOTOGRAPHY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

LAUFER, BERTHOLD, Chicago.

188 mounted photographs of scenes and types of natives from Saghalin
and Amur region.

FIELD MUSEUM OF NATURAL HISTORY.

Made by the section:

453 negatives of Museum specimens, etc., 1914 prints from same, 21
lantern slides, 8 enlargements, 72 negatives developed for Museum
field expeditions, 8 positives for use in making large negatives.

HARRISON, WM. PRESTON, Chicago.

35 photographs of South Sea Islanders.

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Agricultural Experiment Station, Auburn 2

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CALIFORNIA

Agricultural Experiment Station, Berkeley 7

California Academy of Sciences, San Francisco 2

California Fish and Game Commission, Sacramento 8

California State Board of Forestry, Sacramento 1

California University, Berkeley 16

Cooper Ornithological Club, Hollywood 2

Leland Stanford Junior University, Stanford University 2

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Southern California Academy of Sciences, Los Angeles 1

State Mining Bureau, Sacramento 1

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Agricultural Experiment Station, Fort Collins 10

Colorado College, Colorado Springs 3

Colorado Museum of Natural History, Denver	3
Colorado Scientific Society, Denver	1
State Bureau of Mines, Denver	1
State Historical and Natural History Society, Denver	1
University of Colorado, Boulder	2
CONNECTICUT	
Agricultural Experiment Station, New Haven	6
American Oriental Society, New Haven	1
Connecticut Academy of Arts and Sciences, New Haven	3
Connecticut Fish and Game Commission, Hartford	1
Connecticut Geological and Natural History Survey, Hartford	3
Hartford Public Library	2
Yale University, New Haven	4
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Agricultural Experiment Station, Newark	2
FLORIDA	
Agricultural Experiment Station, Tallahassee	5
State Geological Survey, Tallahassee	2
GEORGIA	
Geological Survey, Atlanta	1
HAWAIIAN ISLANDS	
Agricultural Experiment Station, Honolulu	5
Bernice Pauahi Bishop Museum, Honolulu	2
Board of Agriculture and Forestry, Honolulu	1
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Agricultural Experiment Station, Moscow	1
University of Idaho, Moscow	1
ILLINOIS	
Armour Institute of Technology, Chicago	1
Art Institute of Chicago	2
Cement World Publishing Company, Chicago (gift)	1
Chicago, Geographic Society	1
Chicago Historical Society	1
Chicago Public Library	3
Dial Publishing Company, Chicago	2
Forest and Stream Publishing Company, Chicago	2
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State Board of Agriculture, Springfield	4
State Geological Survey, Urbana	5

State Historical Library, Springfield	4
State Laboratory of Natural History, Urbana	2
State Museum of Natural History, Springfield	1
University of Chicago	43
University of Illinois, Urbana	19

INDIANA

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Rose Polytechnic Institute, Terre Haute	1
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Forestry Club, Ames	2
Geological Survey, Des Moines	1
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State Fish and Game Commission, Spirit Lake (gift)	10
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State Horticultural Society, Des Moines	1
University of Iowa, Iowa City	3

KANSAS

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State Board of Agriculture, Topeka	4
State Historical Society, Topeka	1
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KENTUCKY

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Isaac Delgrade Museum of Art, New Orleans	1
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MASSACHUSETTS

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Archaeological Institute of America, Boston	1
Boston Museum of Fine Arts	2
Boston Public Library	1

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Cambridge Public Library	1
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Essex Institute, Salem	2
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Harvard University, Cambridge	2
Horticultural Society, Boston	2
Institute of Technology, Boston	2
New Bedford Free Public Library	2
Peabody Institute, Salem	3
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Phillips Academy, Andover	1
Salem Public Library	2
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University of Minnesota, Minneapolis	6

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Missouri Botanical Garden, St. Louis	2
St. Louis Academy of Sciences	1
St. Louis Mercantile Library Association	1
St. Louis Public Library	2
St. Louis University	1
State Historical Society, Columbia	2
University of Missouri, Columbia	2
Washington University, St. Louis	2

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NEVADA

State University, Reno	4
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Forestry Commission, Concord	3

NEW JERSEY

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Craftsman, Eastwood (gift)	2
Geological Survey, Trenton	2
Newark Museum Association, (gift)	1
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Museum of New Mexico, Santa Fé	36

NEW YORK

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University of North Dakota, University	1

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Cleveland Public Library	2
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State Archaeological and Historical Society, Columbus	1
State University, Columbus	18
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Geological Survey, Norman	4
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State Horticultural Commission, Salt Lake City	1
VERMONT	
Geological Survey, Burlington	1
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VIRGINIA	
Agricultural Experiment Station, Blacksburg	3
University of Virginia, Charlottesville	1
Virginia State Library, Richmond	1
WASHINGTON	
State Geological Survey, Olympia	2
State Library, Seattle	3
WASHINGTON, D. C.	
Biological Society	1
International Bureau of American Republics	2
National Academy of Sciences	3
National Geographic Society	2
United States Government	780
WEST VIRGINIA	
Agricultural Experiment Station, Morgantown	6
University of West Virginia, Morgantown	1

WISCONSIN

Archaeological Society, Milwaukee	1
Beloit College	2
Geological and Natural History Survey, Madison	4
Natural History Society, Madison	1
State Historical Society, Madison	2
State Horticultural Society, Madison	2
University of Wisconsin, Madison	10
Wisconsin Academy of Science, Madison	1

WYOMING

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Avery, Samuel P., Hartford, Connecticut (gift)	1
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Brimley, C. S., Raleigh, North Carolina (gift)	4
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Hrdlicka, Ales., Washington, D. C.	1
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Osburn, Herbert, Columbus, Ohio	2

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Albany Museum, Grahamstown	I
Department of Mines, Pretoria, Transvaal	I
Geological Society, Johannesburg	3
Geological Survey, Pretoria	I
Institut de Carthage, Tunis	I
South African Museum, Cape Town	2
Transvaal Museum, Pretoria	I

ARGENTINA

Museo Nacional, Buenos Aires	2
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AUSTRALIA

Australian Museum, Sydney	3
Australian Ornithologists' Union, Melbourne	I
Botanic Gardens and Government Domains, Sydney	I
Department of Agriculture, Adelaide	I
Department of Agriculture, Hobart, Tasmania	I
Department of Agriculture, Melbourne	I
Department of Agriculture, Sydney	2
Department of Fisheries, Sydney	I
Department of Mines, Sydney	3
Field Naturalists' Club, Brisbane	I
Field Naturalists' Club, Melbourne	I
Geological Survey, Perth	9
Government of the Commonwealth, Melbourne	5
Intelligence and Tourist Bureau, Adelaide	I
Linnean Society of New South Wales, Sydney	2
Melbourne University	I
National Museum, Melbourne	I
Natural History and Scientific Society, Perth	I
Premier's Office, Perth	I
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Queensland Government, Brisbane (gift)	I
Queensland Museum, Brisbane	I
Royal Geographical Society of Australasia, Queensland	I
Royal Society of New South Wales, Sydney	I
Royal Society of Queensland, Brisbane	I
Royal Society of South Australia, Adelaide	18
Royal Zoological Society of New South Wales, Sydney	I

South Australian Ornithological Association, Adelaide	I
Technical Museum, Sydney	I
Victoria National Museum, Melbourne	I
Victorian Government, Melbourne (gift)	I
Western Australian Museum and Art Gallery, Perth	I
AUSTRIA-HUNGARY	
Magyar Nemzeti Museum, Budapest.	I
BORNEO	
Sarawak Museum, Sarawak	I
BRAZIL	
Campinas Centro de Ciencia, Sao Paulo	I
Instituto Agronomico de Estado, Sao Paulo	I
Museo Nacional, Rio de Janeiro	I
Museu Paulista, Sao Paulo	I
BRITISH GUIANA	
Royal Agricultural and Commercial Society, Georgetown	I
CANADA	
Commission of Conservation, Ottawa (gift)	13
Department of Agriculture, Ottawa	14
Department of Agriculture, Regina, Saskatchewan (gift)	I
Department of Agriculture, Victoria, British Columbia	2
Department of the Interior, Geological Survey, Ottawa	32
Department of Lands, Victoria	I
Department of Marine and Fisheries, Ottawa	2
Department of Mines, British Columbia.	2
Department of Mines, Ottawa	2
Minister of Education, Toronto	2
Naturaliste Canadien, Chicoutimi	I
Numismatic and Antiquarian Society, Montreal	I
Ottawa Field Naturalists' Club, Ottawa	I
Provincial Museum, Victoria	I
Royal Society, Toronto	3
University of Toronto	4
CEYLON	
Colombo Museum	2
Royal Botanic Garden, Peradeniya	2
CHILE	
Biblioteca Nacional, Santiago de Chile	4
CHINA	
Botanical and Forestry Department, Hong Kong	I
Royal Asiatic Society, North China Branch, Shanghai	I
DENMARK	
Botanical Garden, Copenhagen	3
Naturhistorisk Forening, Copenhagen	I
Société Botanique de Copenhagen	I
EGYPT	
Zoological Gardens, Cairo	I

ENGLAND

Anthropological Institute of Great Britain and Ireland, London	I
Ashmolean Natural History Society of Oxfordshire, Oxford	I
Asiatic Society, London	I
Brighton and Hove Natural History and Philosophical Society	2
Bristol Museum and Art Gallery	I
British Association for the Advancement of Science, London	I
British Museum (Natural History), London	16
Cambridge Antiquarian Society	I
Cambridge Philosophical Society	2
Cambridge University Library	4
City of Sheffield	I
Croydon Natural History and Scientific Society	I
Dove Marine Laboratory, Cullercoats, Northumberland	I
Ealing Scientific and Microscopical Society, London	I
Entomological and Natural History Society, London	I
Great Britain Geological Survey, London	I
Horniman Museum, London	2
Hull Municipal Museum, Hull	3
Imperial Bureau of Entomology, London	2
Imperial College of Science and Technology, London	I
Japan Society, London	I
Lancashire Sea Fisheries Laboratory, Liverpool	I
Linnean Society, London	3
Liverpool Biological Society	I
Liverpool Geological Society	I
Liverpool Marine Biological Station	I
London Zoological Society,	2
Lord Derby Natural History Museum, Liverpool (gift)	I
Manchester Field Naturalists' and Archaeologists' Society	I
Manchester Museum	I
Marine Biological Association of the United Kingdom, Plymouth	I
Oxford Delegates of University Museum	I
Royal Archaeological Institute of Great Britain and Ireland, London	I
Royal Botanic Gardens, Kew	2
Royal Colonial Institute, London	2
Royal Geographical Society, London	3
Royal Horticultural Society, London	2
Royal Society, London	2
Royal Society of Arts, London	2
South London Entomological and Natural History Society, London	I
Tring Zoological Museum	I

FRANCE

Académie des Sciences, Paris	2
Association des Naturalistes, Levallois-Perret	2
Ecole d'Anthropologie, Paris	I
Muséum d'Histoire Naturelle et d'Ethnographie, Havre	I
Société de Géographie, Toulouse	I
Société des Etudes Scientifiques, Angers	2
Société des Sciences Naturelles, La Rochelle	14

Société des Sciences Naturelles des Saone et Loire, Chalon-sur-Saone	2
Société Géologique du Nord, Lille	1
Société Linnéenne de Bordeaux, Bordeaux	1
Société Nationale d'Agriculture, Paris	1
Société Nationale d'Agriculture, Science et Arts, Angers	1
Société Nationale d'Horticulture, Paris	1
Société Zoologique de France, Paris	2

GERMANY

Botanische Staatsinstitute, Hamburg	1
Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf	1
Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgs., Berlin	1
Deutsche Gesellschaft für Volkstümliche Naturkunde, Berlin	2
Deutscher Seefischerei-Verein, Berlin	1
Deutsches Entomologisches Museum, Berlin	1
Gesellschaft für Erdkunde, Leipzig	1
Institut für Mineralogie und Petrographie, Leipzig	5
Jahres-Verzeichnis der an den Deutschen Univ., Berlin	2
K. Bayer. Ludwig-Maximilians-Universität, Munich	7
K. Bibliothek, Berlin	3
K. Botanischer Garten und Museum, Berlin	3
K. Georg-August-Universität, Göttingen	2
K. Sachs. Gesellschaft der Wissenschaften, Leipzig	1
Universitäts Bibliothek, Kiel	1
Verein für Volkskunde, Berlin	1

INDIA

Agri-Horticultural Society, Madras	1
Anthropological Society, Bombay	1
Archaeological Survey, Burma	1
Archaeological Survey, Calcutta	23
Archaeological Survey, Peshawar	1
Colony of Mauritius,	1
Department of Agriculture, Bombay	1
Department of Agriculture, Madras	2
Department of Agriculture, Pusa	3
Geological Survey, Calcutta	3
Government Museum, Madras	1
Indian Museum, Calcutta	7
Map Record and Issue Office, Calcutta (gift)	1
National Indian Association, Calcutta (gift)	1
Royal Asiatic Society, Straits Branch, Singapore	1
Royal Botanic Garden, Calcutta	1
Superintendent of Government Printing, Calcutta	4

IRELAND

Department of Agriculture, Fisheries Branch, Dublin	2
Royal Dublin Society, Dublin	3
Royal Irish Academy, Dublin	3
Trinity College, Dublin	1

ITALY

American Society, Rome	1
Galleria Sangiorgi, Rome (gift)	1

Musei di Zoologia ed Anatomia Comparata, Turin	I
R. Scuola Superiore d'Agricoltura, Portici	I
Società Geografica Italiana, Rome	2
Società Geologia Italiana, Rome	I
Società Italiana di Antropologia, Florence	I
Società Italiana di Scienze Naturali, Milano	I
Società Romana di Antropologia, Rome	I
Società Toscana di Scienze Naturali, Pisa	I

JAPAN

Anthropological Society of Tokyo	I
Bureau of Productive Industry Formosa Government, Taihoku	I
Deutsche Gesellschaft für Natur- und Volkerkunde Ostasiens, Tokyo	2
Geological Survey, Tokyo	2
Government-General of Chosen, Seoul, Korea	I
Imperial University of Tokyo, College of Science, Tokyo	2
Tohoku Imperial University, Sendai	I
Tokyo Botanical Society, Tokyo	I

JAVA

Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia	4
Department of Agriculture, Buitenzorg	10
Encyclopaedisch Bureau, Batavia	3
Jardin Botanique, Buitenzorg	I

MEXICO

Sociedad Científica "Antonio Alzate," Mexico	I
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NETHERLANDS

K. Instituut Taal-Land en Volkerkunde Nederlandsch-Indie, 'sGravenhage	I
Museum voor Land-en Volkerkunde, Rotterdam	I
Nederlandsche Dierkundige Vereeniging, Leiden	2
Rijks Ethnographisches Museum, Leiden	2
Stats Bibliotheek, Haarlem	I

NEW ZEALAND

Acclimatization Society, Wellington	I
Auckland Institute and Museum	I
Department of Agriculture, Wellington	2
Department of Mines, Wellington	I
Dominion Museum, Wellington	I
Minister of Internal Affairs, Department of Education, Wellington (gift)	I

NORWAY

Bergen Museum	3
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PERU

Cuerpo de Ingenieros de Minas, Lima	I
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PORTUGAL

Academia Real das Sciencias, Lisbon	2
Collegio de S. Piel, Lisbon	2

RUSSIA

Imperial Botanical Garden, Petrograd	I
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SCOTLAND

Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries	I
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Fisheries Board, Edinburgh	3
Royal Scottish Museum, Edinburgh	1
Zoological Society of Scotland, Edinburgh	6

SPAIN

Museo de Ciencias Naturales, Madrid	2
R. Academia de Ciencias, Madrid	1
Sociedad Española de Historia Natural, Madrid	2

SWEDEN

K. Biblioteket, Stockholm	2
K. Svenska Vetenskapsakademien, Stockholm	6
K. Vitt. Hist. och Antik. Akademien, Stockholm	2
Lund Universitets-Biblioteket	2
Statens Skogsförsökanstalt, Stockholm	1
Svenska Sällskapet för Antropologi och Geografi, Stockholm	1
Tromsø Museum	2
Uppsala University	1

SWITZERLAND

Botanischer Garten, Universität, Zurich	2
Conservatoire et Jardin Botaniques, Geneva	1
Lausanne University	1
Musée d'Histoire Naturelle, Lausanne	1
Musée Ethnographique Neuchâtel	1
Musée Zoologique, Lausanne	1
Naturforschende Gesellschaft, Basel	2
Naturforschende Gesellschaft, Bern	1
Société des Sciences Naturelles, Fribourg	1
Société Helvétique des Sciences Naturelles, Aarau	1
Universität Bern	10

URUGUAY

Ministerio de Industrias, Montevideo (gift)	1
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WALES

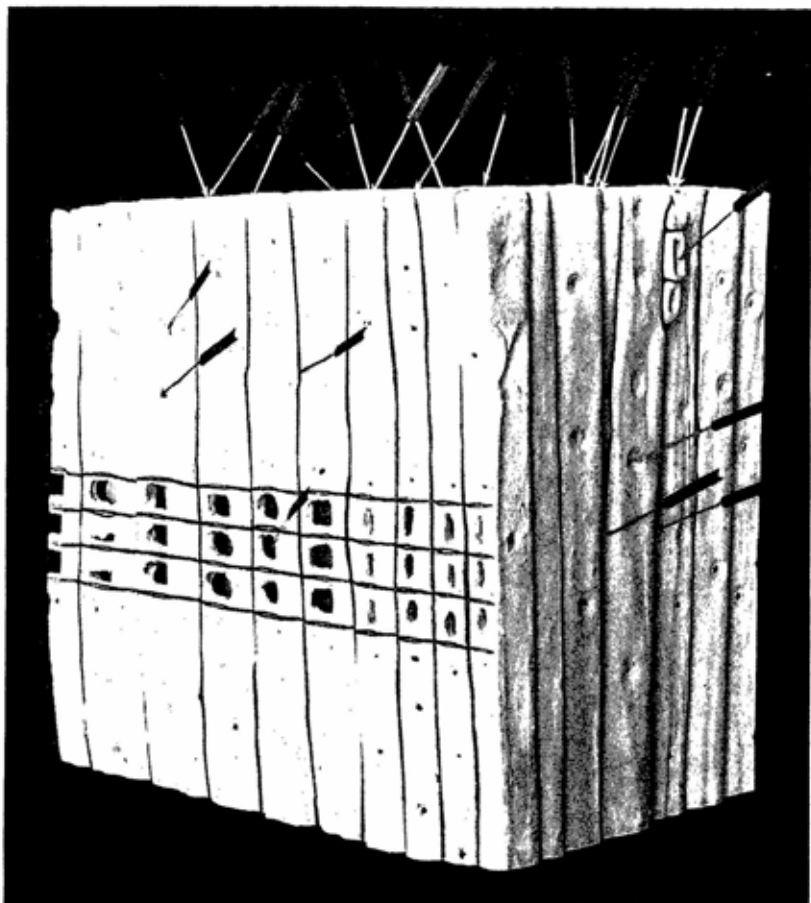
National Museum of Wales, Cardiff	1
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WEST INDIES

Agricultural Experiment Station, Porto Rico	1
Biblioteca Nacional, Havana	1
Department of Agriculture, Kingston	2
Estacion Central Agronomica, Santiago de las Vegas	2
Imperial Department of Agriculture, Barbadoes	2
Jamaica Institute, Kingston	1
Trinidad and Tobago Department of Agriculture, Port of Spain	3
Universidad de la Habana, Havana	2

Bolton, Herbert, Bristol, England	2
Carpenter, G. H., Dublin, Ireland	1
DeCandolle, Casimir, Paris, France	1
Dieterich, Albert, Leipzig, Germany	1
Duncan and Davies, New Plymouth, New Zealand (gift)	1
Ewart, A. J., Melbourne, Australia	7
Gilchrist, Douglas A., Newcastle-upon-Tyne, England	1

Guppy, H. B., Kew, England (gift)	I
Gurney, J. H., Norfolk, England	3
Hartland, E. Sydney, Gloucester, England	I
Lahille, F., Buenos Aires, Argentina	7
Levy-Bruhl, L., Paris, France	2
Marquez, Alberto, Parahyba, Brazil (gift)	I
Niederlein, D. Gustav, Zittau, Germany (gift)	I
Outes, Felix T., Buenos Aires, Argentina	I
Sapir, Edward, Ottawa, Canada	3
Schlagenhaufen, Otto, Zürich, Switzerland	I
Torres, Luis Maria, La Plata, Argentina.	2
Tristan, J. F., San José, Costa Rica (gift)	I
Weigel, O., Leipzig, Germany	2
Wille, N., Christiania, Norway	2
Yamawaki, H., Japan (gift)	3
Zimmer, George F., London, England	I



MODEL OF A MAGNIFIED SECTION OF WOOD.

The designating labels are printed upon the feathered portion of arrows that point to the special structural element of the wood referred to.



ARTICLES OF INCORPORATION

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,
Secretary of State.

[SEAL.]

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archæology, Science, and History.

3. The management of the aforesaid Museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Ed. E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black, and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, George F. Bissell, John R. Walsh, Chas. Fitzsimons, John A. Roche, E. B. McCagg, Owen P. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,
[SEAL.] NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS.

(FEBRUARY 10, 1913.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons and Honorary Members.

SEC. 2. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be sufficient grounds for the forfeiture of an annual membership.

This said annual membership shall entitle the member to:

First.— Free admittance for the member and family, to the Museum on any day.

Second.— Ten tickets every year, admitting the bearer to the Museum on pay days.

Third.— A copy of all publications of the Museum when requested.

Fourth.— Invitations to all special exhibits, receptions, lectures, or other functions which may be given at the Museum.

SEC. 3. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payment within said time shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SEC. 6. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of fifteen members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting, by a majority vote of the members of the Board present.

SEC. 2. Regular meetings of the Board shall be held on the second Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SEC. 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause, or from indisposition to serve longer in such capacity, shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary, and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the second Monday of January of each year, and shall be called the Annual Meeting.

SEC. 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SEC. 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrants shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SEC. 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SEC. 3. The Treasurer shall give bond in such amount, and with such sureties, as shall be approved by the Board of Trustees.

SEC. 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and the Chairman of the Administration Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SEC. 5. The Harris Trust and Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The Bank shall make disbursements only upon warrants drawn by the Curator of "The N. W. Harris Public School Extension of Field Museum of Natural History" and countersigned by the Auditor of Field Museum of Natural History. In the absence or inability of the said officers, warrants may be signed by such officers as shall be authorized by special resolution of the Board of Trustees of Field Museum of Natural History. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the officers above designated. It shall be no part of the duties of the Bank to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR.

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the insti-

tution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SEC. 2. There shall be four scientific departments of the Museum — Anthropology, Botany, Geology, and Zoölogy, each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SEC. 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be five Committees as follows: Finance, Building, Auditing, Administration, and Executive.

SEC. 2. The Finance and Auditing Committees shall each consist of three members, and the Building and Administration Committees shall each consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SEC. 3. The Executive Committee shall consist of the President of the Board the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Administration Committee, the Chairman of the Auditing Committee, and two other members of the Board to be elected by ballot at the Annual Meeting.

SEC. 4. Four members shall constitute a quorum of the Executive Committee; three members shall constitute a quorum of the Administration Committee, and in all other standing Committees, two members shall constitute a quorum. In the

event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any member of the Board of Trustees to act in place of the absentee.

SEC. 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SEC. 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SEC. 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the respective Committees shall be considered as authorized to make the expenditures detailed therein. No increase in the expenditures under any items of the Budget shall be made, except by authority of the Board of Trustees, but the Executive Committee shall have authority, in cases of emergency, to expend a further total sum not exceeding two thousand dollars in any one month.

SEC. 8. The Administration Committee shall have general supervision of the affairs of the Museum. The Committee shall hold one meeting each month with the Director at the Museum within a week preceding each Monthly Meeting of the Board of Trustees.

SEC. 9. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SEC. 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SEC. 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE.

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Administration Committee, and the Auditing Committee, and for two members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library publications, lecture courses, and all scientific and maintenance activities.

SEC. 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.



GROUP OF SCREAMERS. *Palamalia cornuta* AND *Chauna chavaria* AND SCARLET IBIS *Guara rubra*.
Scene, Lake Maracaibo, Venezuela, S. A.

HONORARY MEMBERS.

EDWARD E. AYER
HARLOW N. HIGINBOTHAM
CHARLES B. CORY

STANLEY McCORMICK
MRS. TIMOTHY B. BLACKSTONE
NORMAN W. HARRIS

DECEASED.

ROBERT F. CUMMINGS
GEORGE M. PULLMAN
MARY D. STURGES

PATRONS.

ALLISON V. ARMOUR
EDWARD B. BUTLER
ALBERT M. COLLINS
LEE GARNET DAY
ERNEST R. GRAHAM
NORMAN W. HARRIS
CHARLES L. HUTCHINSON

VERNON SHAW KENNEDY
GEORGE MANIERRE
CHARLES H. MARKHAM
JOHN S. MILLER
JOHN BARTON PAYNE
FREDERICK J. V. SKIFF
WILLARD A. SMITH

DECEASED.

DANIEL H. BURNHAM
JOSEPH N. FIELD

FREDERICK W. PUTNAM
WILLIAM I. BUCHANAN
EDWIN WALKER

CORPORATE MEMBERS.

ADAMS, GEORGE E.
ALDIS, OWEN F.
ARMOUR, ALLISON V.
AYER, EDWARD E.

BARTLETT, A. C.
BLACK, JOHN C.
BLAIR, WATSON F.
BUTLER, EDWARD B.

CHALMERS, W. J.
CHATFIELD-TAYLOR, H. C.
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DECEASED.

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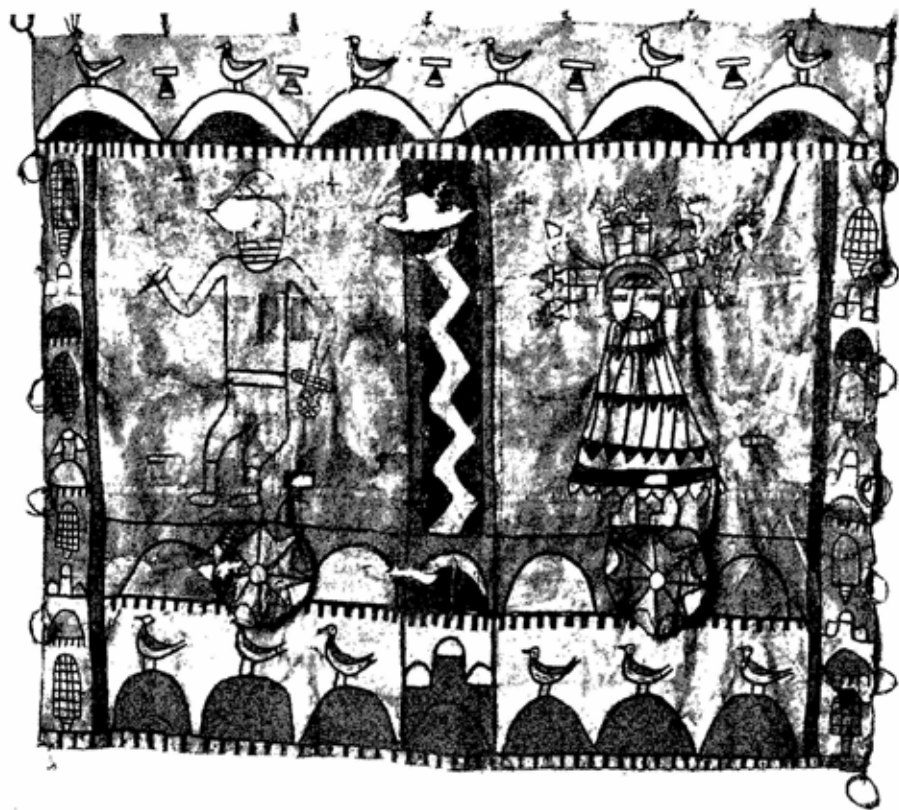
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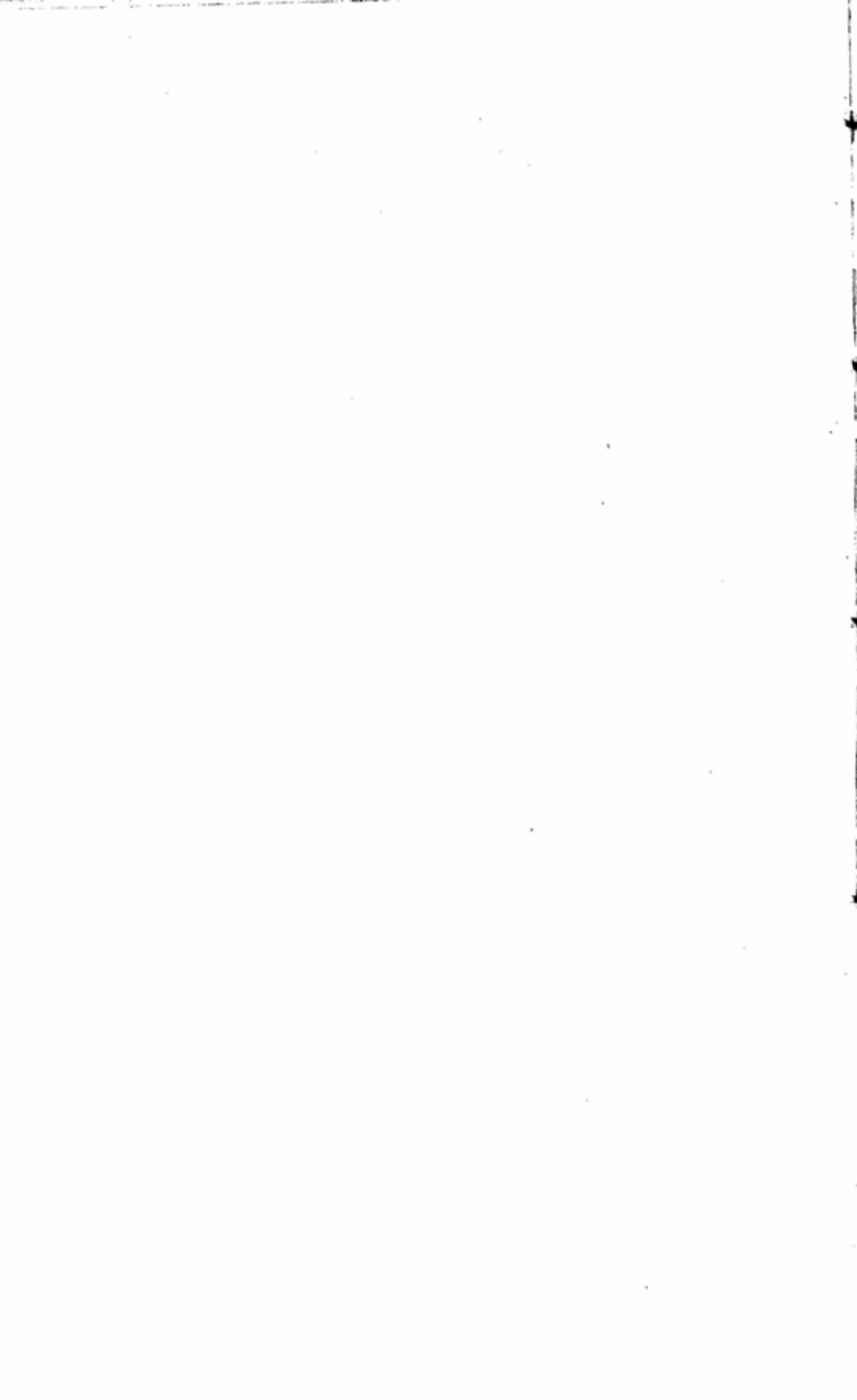
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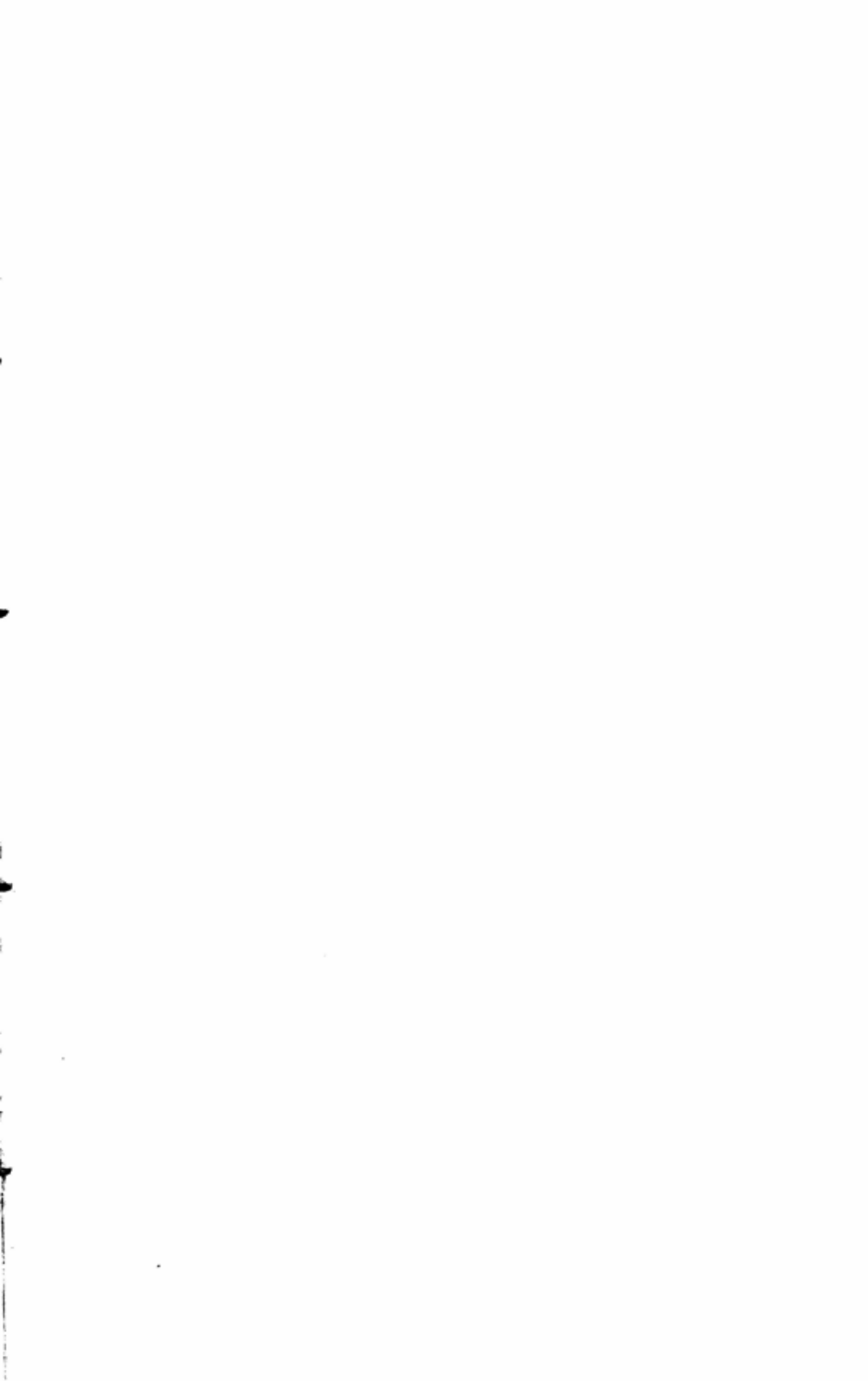
CONOVER, CHARLES H.
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OLD HOPI BALULUKON SCREEN WITH PICTORIAL SYMBOLS ON CANVAS.
Gift of Stanley McCormick.







THE LATE SETH E. MEEK

Assistant Curator of Zoölogy from July 24, 1897 to July 6, 1914, the date of his death.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 194.

REPORT SERIES.

VOL. V, No. 2.

ANNUAL REPORT OF THE
DIRECTOR

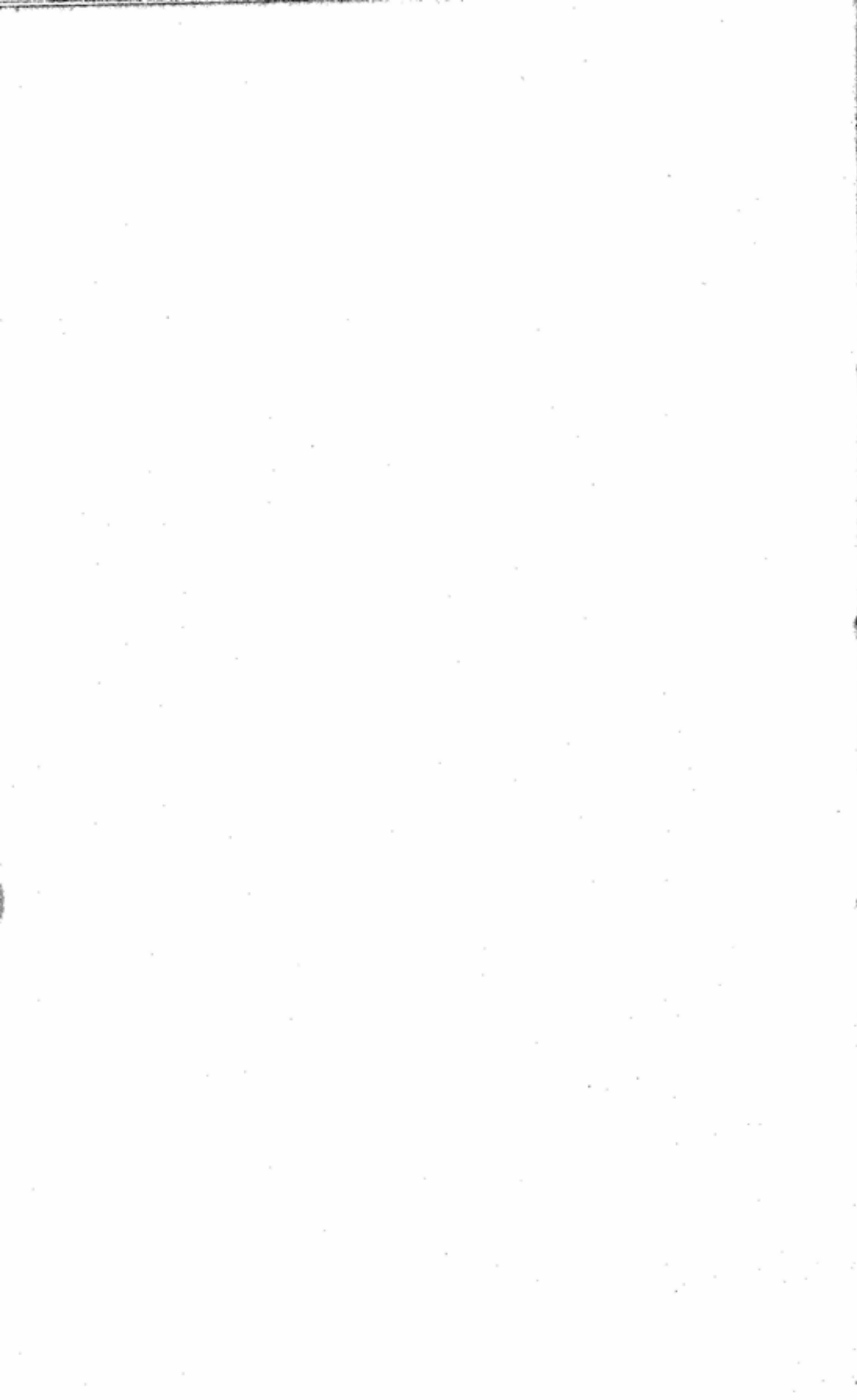
TO THE
BOARD OF TRUSTEES

FOR THE YEAR 1916.



CHICAGO, U. S. A.

January, 1917.



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D. C. DAVIES.

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ELSIE LIPPINCOTT, *Librarian.*

EMILY M. WILCOXSON, *Assistant Librarian.*

January 1, 1917.

ANNUAL REPORT OF THE DIRECTOR.

1916

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1916.

The year has been profitable in accessions of material notwithstanding there have been no expeditions or field work except of a local and unimportant character. More or less confusion is observable throughout the Museum by reason of the prosecution of the large work of installing new material and re-installing old material and selecting material from storage for display, all occasioned by the labor constantly going on in preparation for the exhibition halls of the new Museum building. In fact, the justifiable pride taken in the orderly, systematic and classified arrangement of the public courts and halls of the Museum is rapidly disappearing in the face of the over-crowded condition and shifting about of cases in preparation necessary to the consummation of the ambitious plans of the occupation of the new Grant Park structure.

Mr. George F. Porter, Trustee, has resigned his place upon the Board because of his intended protracted absence from the city. The vacancy has been filled by the election of Mr. Henry Field, second grandson of Mr. Marshall Field, the founder of the Institution.

There have been no retirements from the scientific staff during the year. Dr. J. Alden Mason, of the University of California, has accepted the position of Assistant Curator in Mexican and South American Archæology, and has entered upon his duties. An appointment to the Assistant Curatorship of the Division of North American Ethnology, authorized by the Board of Trustees, has not been decided upon. Mr. Carl L. Hubbs, of the Leland Stanford Junior University, has accepted the position of Assistant Curator of Ichthyology and Herpetology and will commence his duties early in 1917. Both of these appointments are from the younger school of their respective sciences, but come to the Museum with the very highest endorsement and with the promise of a useful career in the Institution.

Mr. Stanley Field having assumed the cost of restoring and maintaining the activity of the Section of Plant Reproduction in the Depart-

ment of Botany, discontinued three years ago, the Museum has been so fortunate as to again secure the services of Dr. B. E. Dahlgren as an Assistant Curator in charge of this work, which he will resume with competent assistants within the next month. Work on the shops and studios required for this section has already commenced.

The death of Mr. Norman Wait Harris, founder of the N. W. Harris Public School Extension of Field Museum, must be announced. The Board of Trustees at a meeting held August 14th unanimously adopted the following:

"The death of Norman Wait Harris has closed a life whose success and whose deeds were based upon and actuated by steadfast Christian principles and an unswerving faith in human character. His wealth was amassed by investments in public and private obligations undertaken for the development and betterment of civic conditions and public education.

"No man of business in these or other times has been more scrupulous in his methods, more honorable in his dealings, or more just in measuring the rights and privileges of individuals or communities. All his manifold transactions, his endowments and gifts to religious, benevolent and educational causes, exemplify a purpose to dedicate these benefactions so as to uplift humanity, and push it forward not alone for its material good but for its spiritual welfare.

"He was a philosopher in philanthropy as he was in finance. The honor and respect so generally shown him in life will be accorded his name by all classes for generations.

"In expressing this appreciation of the life and character of Mr. Harris, the Board of Trustees of Field Museum of Natural History, which Institution has been the grateful object of his wise and humane generosity, desire especially to record their conviction that in no direction in which Mr. Harris has selected a means of manifesting his interest in men and their children, will larger, deeper or more lasting good have been done than by the endowment of The N. W. Harris Public School Extension of Field Museum of Natural History.

"The Board of Trustees of Field Museum of Natural History, having unanimously adopted the foregoing, do instruct that the same be spread upon the records of the Board and request the President to cause the same to be properly engrossed and attested and presented to the family of the late Norman Wait Harris.

The progress of the Harris Extension to the Public Schools is referred to in another part of this report, but the impressive fact that over 250,000 public school children are now included in the service of this Extension is a matter for special mention.

Mr. Stanley Field, President of the Museum, has during the year provided the funds for the establishment of a Pension System in behalf of the employes of the Museum whose compensation is not above a

certain annual sum. This act, affording such striking evidence of Mr. Field's interest in the work of the Museum and sympathy for those who are performing it, has brought to the employes a comforting assurance of the future, which not only spreads contentment and relief throughout the Institution, but must add to the efficiency of the work of its beneficiaries.

The assumption by Mr. Edward E. Ayer of the cost of supplying to the Ayer Ornithological Library any desirable publications not now contained in the library, or which may hereafter be published, was announced during the year — a provision for the future of this important section of the Museum Library which can hardly be over-estimated.

Another gift from the membership of the Board of Trustees is that of Mr. Arthur B. Jones, who assumes the cost of securing and installing a group of six North American buffalo with landscape painting and accessories. This gift which enables the Museum to present in the best form known to the art of modern taxidermy this familiar but practically extinct and exclusively North American mammal in different ages and sex, is a most highly valued contribution to the exhibition halls of the Department of Zoölogy.

During the year the material procured at the San Francisco Exposition has arrived at the Museum and altogether constitutes a very valuable acquisition to all the departments of the Museum. The Chinese pagodas are now installed in eleven cases. The Chinese gateway has been erected in the main dome court, while the minerals and birds and models and other items, all most desirable, have been cared for in the proper departments.

At a meeting of the Board of Trustees held December 11th, by unanimous vote permission was asked of Mr. Stanley Field to name one of the exhibition halls of the new Museum building in his honor, requesting him to select a hall. Mr. Field has since announced his preference for the Hall of Mammals.

A most noteworthy gift to the Museum during the past year has been the private herbarium of the late Elihu Hall, consisting of approximately 35,000 specimens, presented by the heirs of Mr. Hall. This extends the plant collection in the Museum to most gratifying proportions and adds much new material of unusual interest and worth.

Dr. Frank W. Gunsaulus has presented the Museum with his remarkable collection of Japanese sword guards, a collection which has attracted much interest and comment while being on exhibition at the Chicago University. Accompanying this most unique and almost priceless collection, were a number of rare and costly volumes of Japanese

Art. The Board of Trustees elected Mr. Gunsaulus a Patron in recognition of the eminent services he has rendered the Institution.

Mr. Homer E. Sargent was also elected a Patron for similar reasons.

Mr. Marshall Field has presented the Board of Trustees of the Museum with an oil portrait of the Founder of the Museum, painted by Bonnat. It is to be placed on the wall in the Trustees' Room of the new Museum.

As a result of the personal efforts of President Stanley Field, the Board of Trustees has had the pleasure of electing fifty-two Life Members during the past few months. This is a most remarkable manifestation of the growing interest of the citizens of Chicago in the Institution, which far outweighs in importance even the very considerable sum of money thus added to the resources of the Museum.

The contract for the filling in of the large area of ground, whose natural elevation was some thirty feet below the floor of the basement of the new Museum building, is practically finished; in fact, would have been accomplished except for weather conditions. This completes what might be called the foundation work of the building and it is expected that the placing of the steel and the setting of the marble will begin as early in the spring as the prevailing temperature will permit. The main water line has been finished to the building. The big sewer duct has also been laid to the building line. The marble is cut and three-fourths of it is stored in the city, the balance being at the quarries subject to requisition. The structural steel has all been delivered to the site.

MAINTENANCE.—The budget authorized by the Board of Trustees provided the sum of \$156,796 for the maintenance of the Museum for the year ending December 31, 1916. The amount expended was \$136,280, showing a balance in excess of the estimated expenses of \$20,516. In addition to this amount approximately \$11,000 was expended by authority of the Board of Trustees for collections, expeditions, etc., bringing the total expenditure for the year to \$147,280.

PUBLICATIONS.—During the year five publications and two indexes have been issued. These publications comprise five volumes, details of which follow:

- Pub. 186.—Report Series. Vol. V, No. 1. Annual report of the Director to the Board of Trustees for the year 1915. 74 pages. 14 half-tones. Edition 2500.
- Pub. 187.—Botanical Series. Vol. II, No. 11. 1. Contributions to North American Euphorbiaceæ VI–11. Vegetation of Alacran Reef. By C. F. Millspaugh. 32 pages. 2 half-tones. Edition 1500.

- Pub. 188.—Geological Series. Vol. III, No. 10. Catalogue of the Collection of Meteorites. By O. C. Farrington. 82 pages. 4 half-tones. Edition 1500.
- Pub. 189.—Zoölogical Series. Vol. X, No. 14. Mammals of the Collins-Day South American Expedition. By W. H. Osgood. 18 pages. 2 half-tones. Edition 1500.
- Pub. 190.—Ornithological Series. Vol. I, No. 10. Descriptions of apparently new South American Birds, with notes on some Little Known Species. By C. B. Cory. 10 pages. Edition 1500.

These publications have been distributed to all names on the mailing list both in domestic and foreign countries with the exception of those foreign countries where service has been temporarily discontinued by the Bureau of International Exchanges. If a prompt acknowledgment of these publications may be taken as an evidence of appreciation, it has been noted that practically all of the acknowledgment cards have been signed and returned. With the increasing number of publications issued and the increasing demand, especially for the earlier numbers, it has been found advisable to take an inventory of the stock actually on hand. An inventory of the half-tones has also been taken.

NAMES ON MAILING LIST

Domestic	599
Foreign	671

 1,260

DISTRIBUTION OF FOREIGN EXCHANGES

Africa	20	Italy	37
Australia	31	Japan	10
Borneo	1	Java	4
Canada	26	Mexico	19
Central America	7	New Zealand	6
China	3	Norway	8
Denmark	8	Portugal	5
France	54	South America	30
Great Britain	107	Spain	7
Greece	1	Sweden	14
Holland	20	Switzerland	23
India	17	West Indies	8

DISTRIBUTION OF DOMESTIC EXCHANGES

Alabama	2	Delaware	2
Arkansas	1	District of Columbia	62
California	27	Florida	4
Colorado	10	Idaho	2
Connecticut	21	Illinois	65

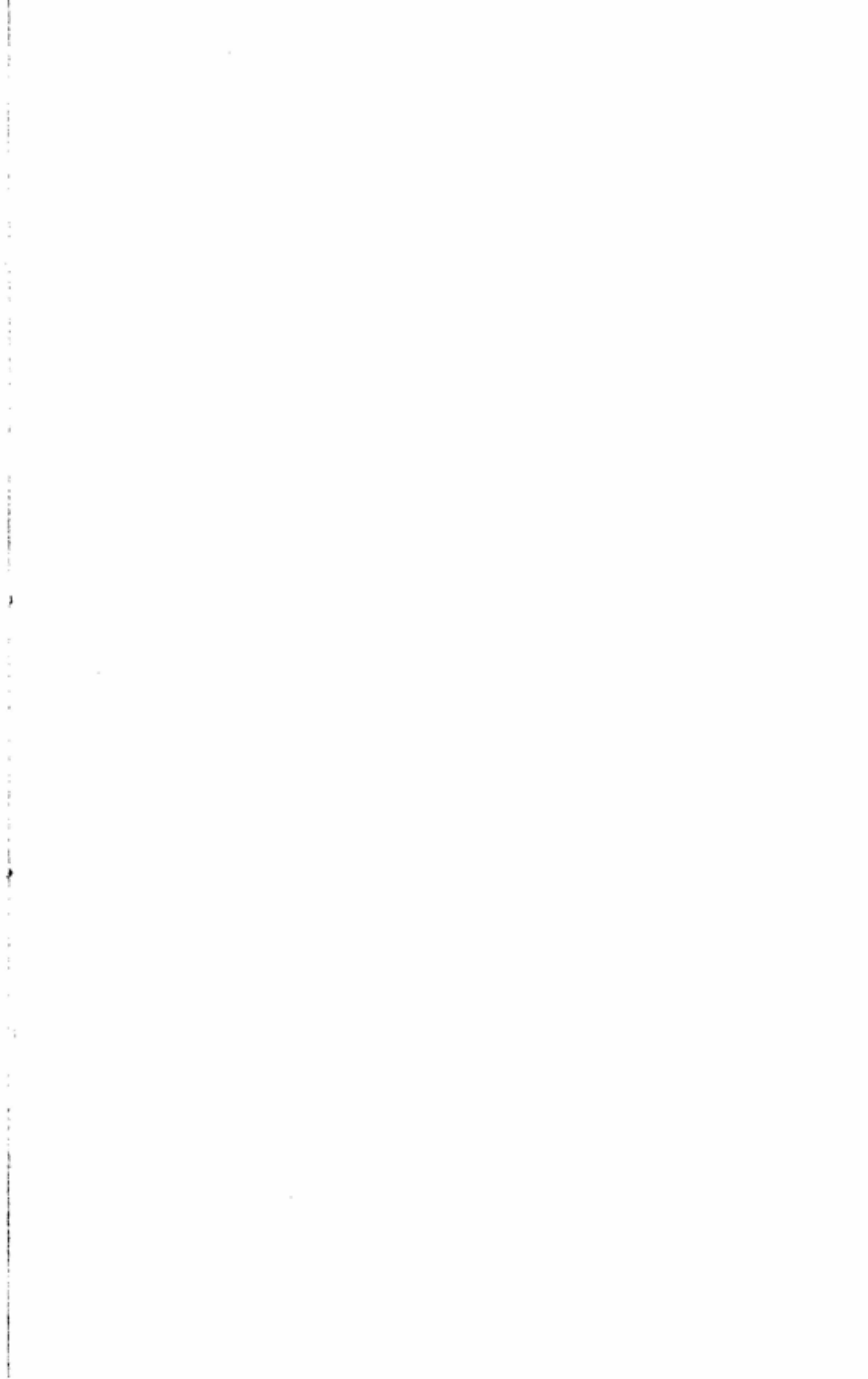
DISTRIBUTION OF DOMESTIC EXCHANGES

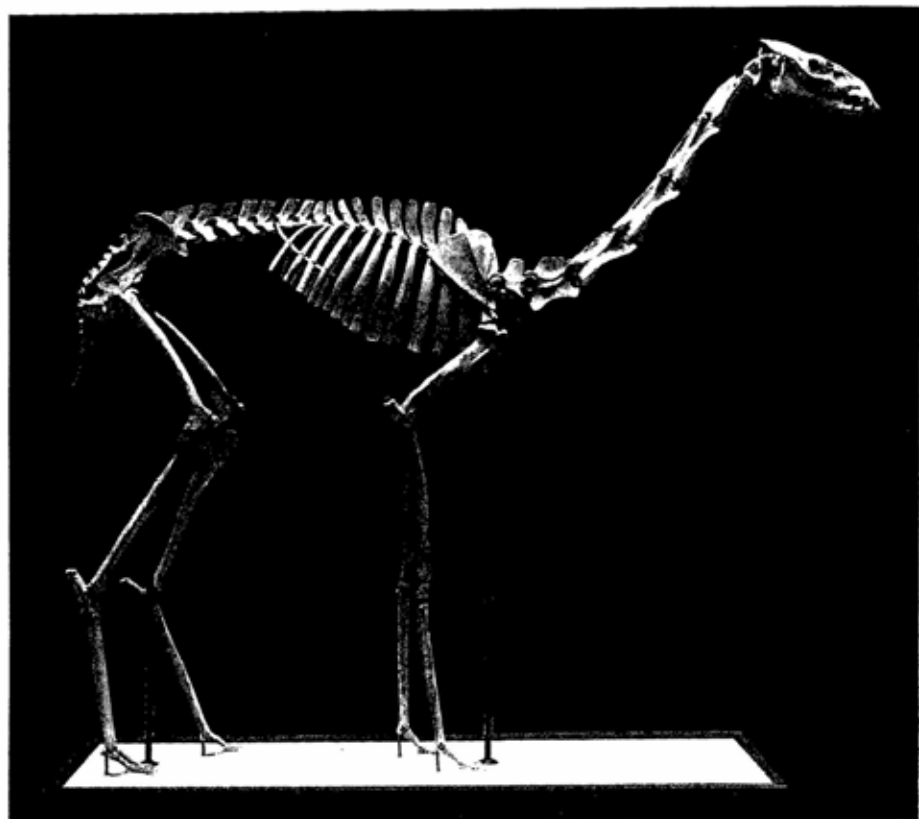
Indiana	16	North Dakota	2
Iowa	13	Ohio	20
Kansas	6	Oklahoma	3
Kentucky	3	Oregon	1
Louisiana	5	Pennsylvania	35
Maine	7	Rhode Island	4
Maryland	9	South Carolina	2
Massachusetts	64	South Dakota	2
Michigan	12	Tennessee	2
Minnesota	8	Texas	3
Mississippi	3	Utah	1
Missouri	14	Vermont	4
Montana	2	Virginia	4
Nebraska	6	Washington	7
Nevada	2	West Virginia	5
New Hampshire	2	Wisconsin	16
New Jersey	13	Wyoming	2
New Mexico	3	Cuba	3
New York	80	Hawaii	5
North Carolina	6	Philippine Islands	3
		Porto Rico	1

THE LIBRARY.—The accessions of the Library for the year are fourteen hundred books and pamphlets, bringing the total number in the library to 69,675, distributed as follows:

General Library	44,928
Department of Anthropology	3,436
Department of Botany	7,072
Department of Geology	9,868
Department of Zoölogy	4,371

The decrease in the number of accessions is largely due to the existing conditions abroad that continue to affect the receipts from contemporary institutions and societies. It is surprising that so many continue to send their publications as regularly as they have, as will be noted by the list of accessions. A most satisfactory feature of the year's work is the acknowledgment of the gifts from friends of the Museum, which include rare and out of print works of an unusually helpful and valuable nature. This is particularly true of the collection of Japanese works presented by Dr. Frank W. Gunsaulus that were indispensable in the installation of the Japanese material given to the Museum by Dr. Gunsaulus, and will be for all time valuable to the students of Japanese art. Among these works are: Audsley's Ornamental Arts of Japan; Bing's Artistic Japan; Dresser's Japan; Gonse's L'Art Japonais; Joly's Sword Mounts and Joly's Sword Fittings;





SKELETON OF FOSSIL AMERICAN CAMEL (*Oxydactylus longipes*). LOWER MIOCENE OF WYOMING.

Tomkinson's Japanese Collection; Jacoby's Japanische Schwertzieraten. Mr. Edward E. Ayer presented copies of Nelson's Birds of Yorkshire and Dixon's Game Birds. Mr. Ayer has also caused to be ordered for the Museum a collection of ornithological works, which when secured, will further enrich the Edward E. Ayer Ornithological Library. The students and artists, as they become acquainted with the resources of the Museum Library, find it the only library in the city containing so many rare and beautifully illustrated ornithological works. Mrs. Edward E. Ayer presented a copy of her translation of the Memorial of Fray Alonso Benavides, 1630. The Cambridge University, England, sent a set of sixteen volumes of its Archæological and Ethnological publications. From the Instituto Biológico of Mexico was received eight of the earlier volumes of *La Naturaleza*. The Canadian Institute sent fifteen of its earliest publications. The Deutsche Morgenländische Gesellschaft, Leipzig, presented twenty-three volumes of its *Zeitschrift*. The Academy of Arts and Sciences, Boston, completed its file of Proceedings of fifty-one volumes to date, by sending volumes one to twenty-eight inclusive. Through the generosity of various governments represented at the Panama-Pacific International Exposition, the library received a hundred books and pamphlets. Among these contributions was that of the Chinese Commission consisting of a work in sixteen volumes, bound in cloth cases, entitled *K'in ting shu king t'u shuo*, issued by the command of the late Empress Dowager in 1903, and now out of print. The Argentine Commission gave twenty-eight volumes, among which is a set of the *Boletín* of the Cordoba Academy of Natural Sciences, particularly desirable. The purchases have been confined to a limited number of books required by the staff for immediate use. Of the twelve orders approved, eleven were filled and these added thirty-five works to the Departmental libraries. Through exchanges with foreign book dealers for publications issued by the Museum, thirteen other important volumes desired by the staff were obtained.

Year after year the periodical lists are examined by the Curators and those periodicals that were supposed to have permanent value when subscribed to but have become of less use to the staff, have been dropped from the list. At the present time ninety-eight periodicals are received with twenty continuations.

The increased cost of materials used in binderies is reflected in the advance in the schedule of prices for binding, leather binding being almost prohibitive. For several years, however, all books except a few sets in continuation have been bound in cloth or library buckram in preference to leather as more durable bindings. During the year six hundred and thirteen books and pamphlets have been bound.

The activities which have to do with the receiving, checking, recording, cataloguing, classifying, labeling, counting, and binding — the process through which a book must pass before it may be properly placed on the shelf — has continued as in past years. The smaller number of accessions has permitted a continuance of the analytical work that further enhances the value of the library. There have been newly written, revised, and rewritten 20,560 cards.

DEPARTMENTAL CATALOGUING, INVENTORING, AND LABELING.— The work of cataloguing in the Department of Anthropology has been continued as usual during the current year, the number of catalogue cards written by the various members of the staff totaling 2,036. These cards are distributed among the divisions as follows: North American Ethnology and Archaeology 178; South American and Mexican Ethnology and Archaeology 169; Melanesian Ethnology 199; Philippine and African Ethnology 139; Gunsaulus collection of Japanese sword-guards 926; Tibetan Ethnology 242; Chinese Archaeology and Ethnology 181; Indian Archaeology 2. These cards have been entered in the inventory books of the Department, which now number 38. The annual accessions amount to 29, all of which have been entered. The total number of cards entered beginning from the first volume is 141,552. The Section of Printing has supplied 4,533 labels to the Department during the year. These are distributed over the divisions as follows: American Archaeology 235; Chinese Archaeology 277; African Ethnology 2,167; Melanesian Ethnology 1,854. The Section of Photography has provided the Department with 232 negatives, 146 prints and 18 lantern slides. The prints were duly classified and added to the departmental albums. An additional number of 436 cards were prepared for the catalogue of lantern slides, the inauguration of which was reported last year. To the label file were added 875 new label cards.

All prepared and organized material received by the Department of Botany during the year has been catalogued to date. 20,292 entries have been made, making the total number of entries 453,083. Of the Hall herbarium 14,149 specimens have been prepared, mounted, and catalogued for insertion in the general herbarium of the Museum.

The cataloguing in the Department of Geology has kept pace with accessions and all specimens in the department are fully recorded. The largest number of entries made was of economic specimens, a total of 1,302 new entries having been made in this division. These with additional entries give a total number for the year of 1,989, and a total number for the department of 134,700. The number of cards written during the year was 78. The labels written number 1,047. About

200 of these labels were handwritten with white ink on black cardboard to serve as temporary labels until printed ones could be secured; the remainder were from the Section of Printing. Most of the labels were for newly installed economic specimens. A total of 722 printed labels has been received during the year, the larger part being for the meteorite collection. These have all been installed with the corresponding specimens. There remains in the hands of the printer, copy for 1,143 labels.

In the Department of Zoölogy the cataloguing and labeling of the South American birds received from Museum expeditions has been continued during the year. A regional catalogue of South American mammals was prepared in the form of an index of about 650 cards. A total of 1,105 labels were installed as follows: 36 labels for mounted fishes; 2 for the Moose group; 2 for the osteological exhibit; 1 for South American bird group; 55 for mounted birds and 1,009 for the shell collection. The entries made during the year number 1,817, of which 1,663 were for ornithology and 154 for mammalogy.

The following table shows the work performed on catalogues and the inventorying accomplished:

	No. of Record Books	Total No. of entries to Dec. 31, 1916	Entries During 1916	Total No. of Cards Written
Department of Anthropology	38	143,338	2,036	141,552
Department of Botany	57	453,083	20,292	70,750
Department of Geology	22	134,593	1,989	7,783
Department of Zoölogy	40	98,647	1,817	33,968
The Library	14	102,830	2,540	225,527
Section of Photography	20	114,455	1,152	.....

ACCESSIONS.—In the Department of Anthropology the most remarkable purchase of the year is represented by the acquisition made at the Panama-Pacific International Exposition, consisting of a Chinese honorary gateway and eighty-four models of Chinese pagodas. This material was turned out by the Industrial School maintained by the Jesuit Establishment Sikkawei near Shanghai. The gateway is entirely carved of teakwood, and in its monumental character presents a fine example of Chinese architecture, and thus far is the first monument of this art in the Museum that is constructed on the size of an original. The magnitude of the composition, the harmony of proportions, the high technical skill, the numerous artistic and beautiful carvings, the wealth of ingenious decorative designs which embody a fine record of Chinese thought, make this object a most striking and prominent acquisition. The collection of eighty-four models of Chinese pagodas has both a highly scientific and an educational value. The pagodas are

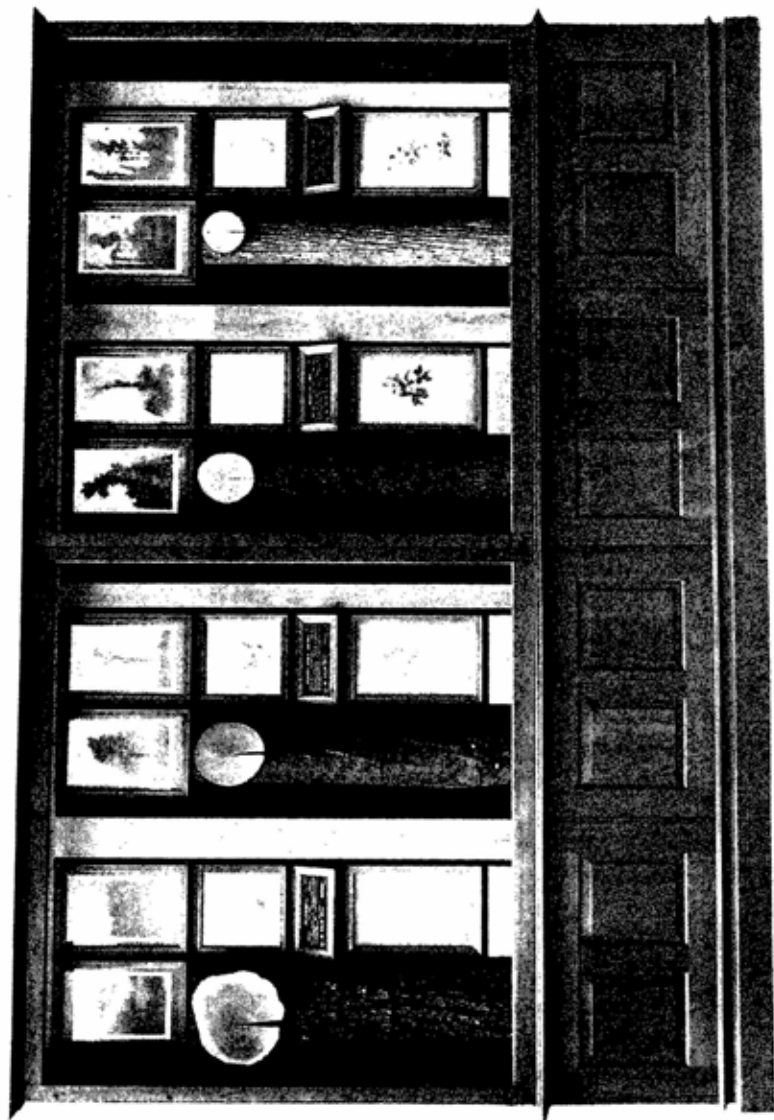
the most conspicuous religious buildings of China, veritable landmarks with a detailed recorded history. This collection presents the very first comprehensive attempt to introduce them into a museum and to render their study generally accessible. The models being reproduced according to a rigid scale (about $\frac{1}{50}$ of the originals, on an average), convey an exact idea of the original monuments and allow a minute study, even of details of construction. All provinces of China are represented in the collection; besides, there are two pagodas from Korea and two from Tibet. A prominent accession by purchase is a collection of more than eight hundred Mexican archaeological objects. The majority of antiquities in this collection are from excavations on the outskirts of San Miguel Amantla, Azcapotzalco. Among the hundred pieces of pottery forming a part of this collection are many rare and unique forms. There are also about two hundred small objects of great excellence and artistic quality, comprising Mixtec stone figurines, mirrors of obsidian and pyrite nodules, beads and pendants of various forms carved from jadeite, agate, and other translucent stones. Another acquisition made by purchase consists of seven choice Navaho blankets, in good condition, collected about forty years ago at Fort Wingate, New Mexico, by Lieut. Col. Wilson T. Hartz of the U. S. Army. The most notable gift received during the year is the collection of Japanese sword-guards and sword-furniture brought together by the efforts of Dr. Frank W. Gunsaulus. This important collection consists of over nine hundred specimens, comprising all the manifold designs ever conceived for the decoration of sword-guards, and covering all periods from mediæval to modern times. These appurtenances of the sword represent a splendid object-lesson in the application of Japanese design, and eloquently reveal the innate spirit of Japanese chivalry and gallantry. The gift of Dr. Gunsaulus is accompanied by a valuable collection of books relating to Japanese art and in particular to sword-guards, as well as by a special catalogue in manuscript, prepared by Miss Helen Gunsaulus with great care after many years of earnest study of the subject. Also 1,793 negatives of the sword-guards (the obverse and reverse of each having been taken) were presented by Dr. Gunsaulus. Eight musical instruments made in Peking were presented by the Commission of the Republic of China at the Panama-Pacific International Exposition. To Mr. Luther Parker, a former government official in the Philippines, the Department is indebted for a small, but very interesting collection of ancient pottery fragments and other material, found by him in burial caves on the Islands. This pottery comes from the kilns of Sawankalok in Siam and from those of southern China, and testifies to the mediæval intercourse of the Islands

with the mainland of south-eastern Asia. Of special interest is a fragment of Celadon pottery of Chinese origin, the body of which exhibits a pure white porcelain mass, while as a rule the early Celadon glaze is wrought over a crude stoneware body. Mr. Arthur B. Jones enabled the Museum to acquire a silver statuette made in Lhasa, Tibet, and inlaid with pearls, turquois, and coral; it represents Amitabha, the Buddha of Light. Two fine old Navaho blankets, one of bayeta, are gifts from Mr. Homer E. Sargent. Mr. Sargent also provided funds for the purchase of a collection of ancient pottery from Casas Grandes, Mexico. It consists of 162 small pieces comprising coiled and indented, smooth, undecorated, polished red and black, as well as the beautiful polychrome ware characteristic of that region. It is equally of scientific and artistic value. Mr. Sargent also presented to the Museum twenty beautiful old head-plumes worn by the Karok Indians of northwestern California in the White Deer-Skin Dance. To Mr. Edward E. Ayer are due six fine old buckskin skirts, two aprons ornamented with pine-nuts, three excellent head-bands of buckskin, worn in the Jumping Dance, and a quiver of basketry carried during the same dance-ceremony, all from the Hupa, Yurok, and Karok Indians of northwestern California. Mr. Ayer also contributed thirty-eight prehistoric stone implements collected in the vicinity of Phoenix, Arizona. An interesting image carved from green quartz, of Mexican origin, was presented by Mrs. S. E. Barrett.

The number of accessions received by the Department of Botany during the year numbered 48, of these all the specimens of 44 have been prepared, organized, and catalogued. The accessions comprise 44 economic and 20,248 herbarium specimens. The most important addition to the plant collections is that of the private herbarium of Elihu Hall, presented by the family of the late Mr. Hall. This herbarium is estimated to contain about 35,000 sheets; it also comprises a great mass of duplicates that will be utilized in exchanges. The Hall herbarium embraces Mr. Hall's personal collections in Illinois, Texas, and Oregon, and Hall and Harbor's Rocky Mountain Plants; together with a mass of material acquired in exchange with his contemporaries: Curtiss, Bebb, Clinton Patterson, Bolander, Faxon, Gray, M. E. Jones, Mohr, Canby, Hale, Vasey, Blake, Bishop, Fendler, Eaton, Garber, Howell, Parry, Lemmon, Macowan, Oakes, Porter, Ravenel, Wolf, and many others in North America. From his foreign exchanges he secured a complete set of all the numbers of the *Relique Mailleanæ*, and very full series of Bourgeau, Spain; Dænen, Switzerland; Blanche, Syria; Laresche, Switzerland; Gaillardot, Syria; Cosson, France; Heldereich, Greece; Mathonnet, France; Bourgeau, Italy; Timothée, France; Pisa

Herbarium, Italy; Bordere, France; Bunge, China; Bourgeau, France; Müller, Australia; McOwan, South Africa; Bolus, Africa, and many others. The Hall herbarium embraces the years 1845 to 1880. Its unique element consists in a large number of specimens gained by growing plants near his home, in the neighborhood of Athens, Illinois, from seeds gathered in the western and southwestern regions of the United States and others secured from fruiting herbarium specimens from all parts of the world; thus enabling investigators to compare original plants with those grown in a widely different environment. The other notable additions for the year are: Ames, Philippine orchids 258; Clements, California plants 371; Gaumer, Yucatan 311; Grant, Washington 76; Miss King, Kentucky 397; Lansing and Sherff, Illinois 92; Meyer, China 81; Miss Moodie, Alberta 398; New York Botanical Garden, West Indies 1,447; Miss Standley, Florida 335; U. S. National Herbarium, various regions 324; University of California, California 129; and Wenzel, Philippines 636. The additions to the organized herbarium during the year are regionally shown in the following table. These figures represent only those regions that have been augmented during the past year—not the herbarium as a whole:

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
ARCTIC REGION:		
Spitzbergen	3	8
ALASKA	3	1,151
Ottika Island	1	1
Unalaska	1	36
CANADA:		
Alberta	418	1,151
Nova Scotia	1	383
UNITED STATES:		
Alabama	1	1,540
Arizona	59	8,190
California	505	24,273
Santa Catalina Isl.	1	187
San Benedicto Isl.	1	10
Colorado	6	9,258
Dakota, North	75	637
Dakota, South	4	1,306
District of Columbia	14	2,524
Florida (Excl. of Keys)	342	20,107
Idaho	2	3,650
Illinois	948	23,186
Indiana	36	6,257
Kentucky	397	1,368
Maryland	23	1,200
Michigan	78	3,431
Isle Royal	1	1



TYPE CASE. NORTH AMERICAN FORESTRY.

Method of installing timber specimens of the second class. In this installation the same ratio of size of trunk is maintained as in the timbers of the first class as seen in Plate II of this volume.



LOCALITY	Added to Herbarium in 1916	Total in Herbarium
UNITED STATES:		
Montana	1	4,029
Nebraska	2	493
Nevada	7	1,270
New Hampshire	4	1,554
New Mexico	14	3,502
New York	20	6,457
Ohio	1	2,045
Oklahoma	2	296
Oregon	1,013	8,401
Pennsylvania	8	10,130
Rocky Mountains	946	2,322
Texas	1,290	9,607
Utah	5	2,548
Virginia	11	2,723
Washington	77	7,420
Wisconsin	32	4,931
Wyoming	3	1,569
Yellowstone	1	528
BERMUDA	8	669
WEST INDIES:		
Anagada	7	33
Bahamas:		
Mangrove Cay	1	7
New Providence	1	2,444
Barbados	3	353
Cayman Brac	3	98
Cuba	206	10,948
Isle of Pines	10	658
Dominica	13	90
Haiti	22	331
Jamaica	564	7,218
Martinique	1	618
Porto Rico	613	4,727
Culebra	1	212
St. Croix	1	1,280
Santo Domingo	5	1,322
St. Kitts	1	13
Tortola	1	33
CENTRAL AMERICA:		
Costa Rica	2	595
Guatemala	1	3,054
Honduras	1	272
Ruatan	2	23
Mexico	29	36,983
Lower California	2	1,682
Guadaloupe Isl.	1	42
Yucatan	1,088	5,970
Panama	21	103

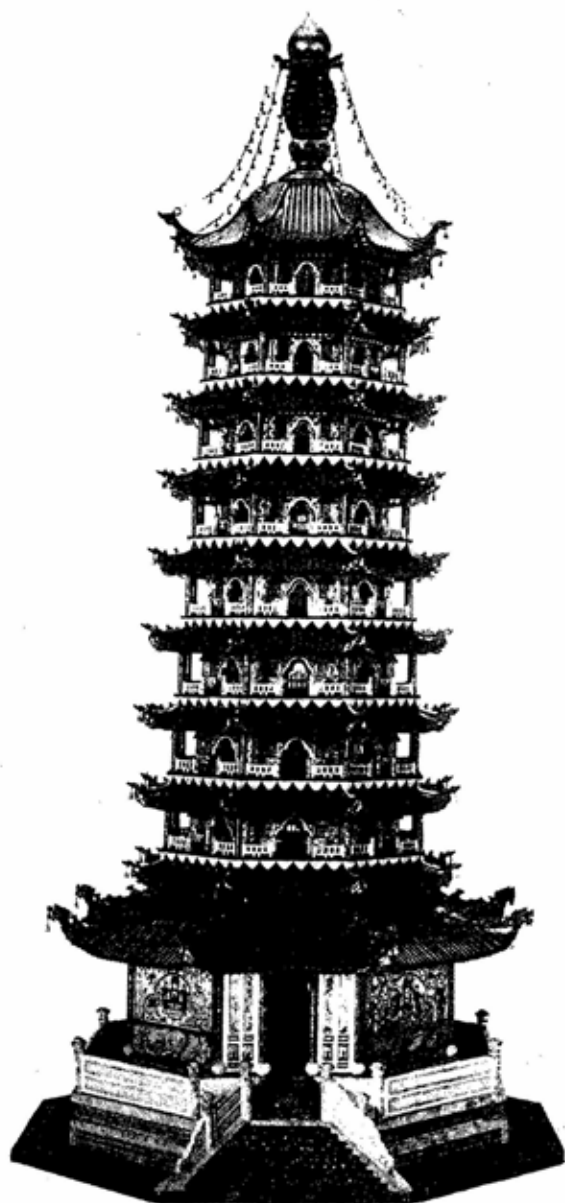
92 FIELD MUSEUM OF NATURAL HISTORY—REPORTS, VOL. V.

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
SOUTH AMERICA:		
Argentine	94	1,065
Bolivia	8	3,924
Brazil	1	596
Venezuela:		
Curacao	7	99
Ecuador	1	850
Trinidad	1	487
EUROPE (in general)	12	93
Austro-Hungary	504	7,773
Belgium	89	283
Denmark	10	381
France	4,152	8,337
Guernsey	1	1
Germany	367	8,655
Great Britain:		
Angle Isl.	1	1
England	117	2,462
Ireland	8	172
Scotland	35	544
Wales	4	83
Greece	172	696
Italy	955	3,503
Lapland	18	158
Macedonia	1	1
Mediterranean Islands:		
Corsica	13	67
Malta	1	6
Majorca	1	4
Norway	63	1,178
Portugal	11	31
Russia	29	1,626
Spain	278	632
Sweden	264	9,599
Switzerland	980	3,632
Turkey	3	20
AFRICA:		
Abyssinia	1	220
Algeria	424	564
Egypt	10	46
Morocco	1	7
South Africa	629	1,912
Canary Islands	47	47
Madeira	83	103
Mauritius	9	21
Nubia	1	10
Tunis	72	79
ASIA:		
Arabia	1	20

LOCALITY	Added to Herbarium in 1916	Total in Herbarium
ASIA:		
Asia Minor	45	104
China:		
Altai Mountains	291	291
Mongolia	4	6
Sungaria	45	45
India	24	1,062
Japan	1	297
Persia	28	44
Philippine Islands	895	8,912
Siberia	5	468
Syria	280	362
AUSTRALIA (general)	181	2,234
New South Wales	12	258
Queensland	4	25
South Australia	2	2
Tasmania	1	307
Victoria	4	430
West Australia	17	142
OCEANICA:		
Marquesas Islands:		
Muka Hiva	4	4
Sandwich Islands (general)	5	489
Oahu	2	495
Horticultural	65	2,736
Illustrations mounted as Herbarium sheets	109	2,032

In the Department of Geology a considerable number of valuable accessions were received from exhibitors at the Panama-Pacific International Exposition. The commissions or firms presenting important material were the Gas Light and Coke Company, London, England, Australian Commission, Bolivian Commission, New Zealand Commission, Chinese Commission, and Greek Commission. The Gas Light and Coke Company, London, England, presented 223 specimens illustrating the by-products of gas manufacture and a mahogany floor case for its exhibition. The series is very complete and well prepared, showing the various products obtained from the distillation of coal. The specimens include coal, coke, pitch, large masses of crystals of prussiate of potash, various dyes, various hydro-carbons, such as benzol, toluol and varieties of creosote, various forms of naphthaline, pyridine, anthracene, alizarin, ammoniacal liquids, sulphates, nitrates, muriates, carbonates, and other compounds of ammonia, sulphur, coperas, sodium and potassium cyanides, various blue coloring matters, other coloring matters, cyanogen, fluorescin, and various other products. The whole forms a very nearly complete series illustrating products

which may be obtained from coal. The Australian Commission presented 61 specimens illustrating many important ores of Australia. Many of the specimens are of large size, and the whole accession aggregated several hundred pounds in weight. An important feature was a full series of ores and concentrates of lead and zinc from the Broken Hill district. There are also gold ores, tin and copper ores from many localities, and a number of miscellaneous specimens. They are all of excellent quality and will add much to the representation of Australian ores in the Museum. The Bolivian Commission presented 80 specimens consisting chiefly of ores of tin from various mines of Bolivia. A large number of these specimens illustrate ores of remarkable richness. Although Bolivia is one of the world's most important sources of tin, the Museum had previously no representation of its tin ores, so that the accession is especially welcome. Ores of bismuth, molybdenum and copper were also included in the series received. Among the copper ores, some remarkable arborescent aggregates of native copper are of special interest. The Chinese Commission gave a series of ores numbering 291 specimens, chiefly from the Province of Honan, China. These include specimens of gold ore, sulphur, silver ore, asbestos, copper ore, stream tin, manganese ore, antimony ore, fluorite, coke, and coal. Specimens of lead, zinc, and iron made from these ores were also included. There were also a number of specimens of mineralogical interest, such as two specimens of crystallized cinnabar, a large one of calcite and a number of crystallized smoky quartzes. All of this material is entirely new to the collections, no specimens from this part of China having been previously possessed in the Department. The Commission also presented a model of a large lead mining, milling, and dressing works at Shui kao Shan, Province of Hunan, China. This model is about 13 feet square and represents on a scale of 1 to 135 the topography of the region where the lead mines are located and the various buildings, derricks, pits, and tracks by means of which the activities of the mines are carried on. The model has been prepared with care and accuracy and has geographic as well as economic interest. The Greek Commission presented 315 specimens of ores which represent all the important mineral products of Greece except the marbles. They include specimens of zinc, lead, silver, iron, manganese, nickel, copper and chrome ores together with specimens of emery and magnesite. There are also specimens of lead and base bullion made from the ores, and of emery powders, calcined magnesite, magnesite cement and magnesite fire brick. The specimens are of large size and well adapted for museum display. The large blocks of Greek emery are especially satisfactory, as the Museum has hitherto been unable to secure display



MODEL OF THE SO-CALLED PORCELAIN PAGODA OF NANKING.
Made by the Chinese Orphanage of Sikkawei near Shanghai.



specimens of satisfactory size of this widely used and well-known substance. The zinc ores include a great variety of the brilliantly colored smithsonites for which Laurium is famous. Besides the ores there are two lots of the slags from the silver smelting operations of the ancient Greeks between 600 B.C. and 400 B.C. which are now being resmelted to save the silver that the early smelters could not extract. The New Zealand Commission presented a restoration of the giant, extinct bird known as the Moa. This restoration was prepared with great care at the New Zealand Museum, and shows a bird standing over 12 feet in height with a body measuring 8 feet in length. The probable feather covering is shown, also the form and dimensions of the bird. The great size of this creature makes it an object of special interest. A very valuable accession obtained largely through the efforts of Mr. W. J. Chalmers, consisted of 40 specimens of tin and copper ores presented by the leading tin mining companies of South Africa. These ores had not been previously represented in the collections and they are also of importance since they show characters not seen in the tin ores of other regions. Mr. Chalmers also kindly presented two especially fine crystals of gem tourmaline from California and a specimen of crystallized gold from French Guiana. A series of pebbles from Wyoming showing unusual polishing by wind, was presented by Messrs. Geo. F. Porter and A. A. Sprague. From the Chamber of Commerce of Chlo-ride, Arizona, a representative series of the gold, silver, lead, and other ores of that district was received by gift, making a valued addition. An interesting series of 15 specimens illustrating the manufacture of potash and other products from alunite and of nitrogen products manufactured from the air, was presented by the Armour Fertilizer Works. In this connection also, the gift by Professor S. H. Knight, of the University of Wyoming, of specimens of the leucitic rocks of Wyoming, which are considered possible sources of commercial potash, is worthy of mention. The Titanium Alloys Manufacturing Company presented a specimen of metallic titanium, which is a rarely produced substance, together with specimens of two ferro-titanium alloys. The Norton Laboratories gave a large bar of metallic magnesium. A series of pegmatite products used in cement facing and two large masses of pegmatite were donated by the Crown Point Spar Company of Essex, New York. Professor E. L. Moseley of Bowling Green, Ohio, gave some interesting specimens of celestite and invertebrate fossils. By exchange, 13 specimens of stream concretions were obtained from Professor F. Justin Roddy and specimens of the Dalton and Lake Okechobee meteorites were received from the United States National Museum. An iron meteorite from Batavia, New York, weighing 5,930

grams, and an individual weighing 2,000 grams of the Plainview, Texas, meteorite fall were purchased, as were also specimens of four other meteorites. Eight specimens of the peculiar glassy forms called australites were also purchased. By collection, about 40 specimens of fossils and economic specimens were added as a result of the Curator's trip to La Salle County, Illinois, and 75 specimens minerals, dendrites and rock products, from field work in Maine. The Assistant Curator collected in Arizona 20 specimens of copper ores and fossils.

In the Department of Zoölogy the most important accession of the year is a very fine and practically perfect egg of the extinct bird *Æpyornis*. It was purchased from Mr. Peter A. Bjelde who obtained it from natives in Madagascar and personally brought it from there to this country. The first installment of the Museum's share of the birds taken on the Collins-Day expedition consisting of 215 bird skins were received from the American Museum of Natural History. The mammals of this expedition were received early in the year but have not yet been accessioned. A collection of 57 mammals and 76 bird skins from Argentina were presented by the Argentine Commissioners to the Panama-Pacific International Exposition and deserve special mention. Among them were a number of species new to the collection. To the collection of fishes and reptiles there were added but six specimens. One of them, however, a Yellow-bellied Sea Snake, was very desirable, as well as new to the Museum collection. By far the largest and most important addition than can be recorded was the Hall collection of shells, which was a donation from the heirs of Elihu Hall, Athens, Illinois. This collection consists mainly of American fresh-water shells and contains at least several thousand named specimens. As they have not yet been gone over and sorted by a specialist, the exact number of specimens that will be accessioned eventually cannot be definitely given at this time. Among the insects obtained, the most desirable were 63 Sphinx Moths secured, by an exchange, from Mr. B. Preston Clark of Boston. Of this lot at least thirty species were new to the collection. Another desirable, though smaller acquisition, was an exchange whereby 17 rare butterflies from northern India were secured. The accessions may be summarized as follows: Purchase: 138 mammals, 175 birds; 4 nests and eggs; By gift: 61 mammals, 306 birds, 14 nests and eggs, and approximately 3,000 shells; By exchange: 39 mammals and 80 insects.

EXPEDITIONS AND FIELD WORK.—A few days were spent by the Curator of Geology in visiting several localities in La Salle County, Illinois, and as a result specimens of a number of occurrences which had not been

previously represented in the collections were procured. The material obtained included specimens of cone-in-cone structure, stylolites and concretions, fossil ferns and a series of hydraulic limestones and cements. A collecting trip was also made by the Curator of Geology among the pegmatite regions of western Maine. A large number of valuable specimens of the rare minerals of the region, such as tourmaline, columbite, beryl, and herderite were procured, also some showy dendrites and a striking series illustrating zonal weathering. The Assistant Curator of Geology through a brief trip among most of the large porphyry copper mines of New Mexico and Arizona secured a representative though limited suite of the characteristic ores of this important new development of the mining industry. The large mines visited on this trip and from which specimens were secured were the Chino and Empire Zinc mines in New Mexico, and the Copper Queen, Old Dominion, Inspiration, and Miami mines in Arizona. At Grand Canyon, Arizona, also, he obtained a number of specimens of Cretaceous fossils, copper and silver ores and asbestos.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT.—There have been placed on permanent exhibition in the Department of Anthropology 90 new cases, most of these being completely labeled. The material installed in these cases is distributed over the various divisions as follows: African ethnology 27 cases; Melanesian ethnology 44 cases; American ethnology 1 case; American Archaeology 7 cases, and Chinese pagodas 11. The interesting Mexican pottery from Casas Grandes presented by Mr. Homer E. Sargent has been installed in two standard cases in the East Court. The recent acquisition of Navaho blankets necessitated the reinstallation of a case of Navaho blanketry in Hall 6. Progress has been made in the installation in standard cases in the East Court, which, since the opening of the Museum, has been shown in the old Peabody cases from the World's Columbian Exposition. Four cases of the Hopewell material, from Ross County, Ohio, are well along toward completion in Alcove 83. The new arrangement on shelves is very satisfactory, and brings out to advantage the scientific value of this remarkable collection. The prehistoric pottery from Chiriqui Republic of Panama, has been permanently placed on exhibition in two standard cases in Alcove 93 of the East Court. Costa Rican archaeology now in Alcove 84 is being prepared for permanent exhibition. All Peabody cases released, as the work of reinstallation progresses, are used for permanent storage in Halls 68 and 69 of the West Annex in accordance with the plan outlined a year ago. For the purpose of preserving and photographing material, work has been done in 138 exhibition cases. Installed cases of the Joseph N. Field collec-

tions have been moved from Hall 72 into Hall 80, thus giving needed floor space in the former for working purposes. One-fourth of the floor space in Hall 71 has been cleared with the result that desired additional room for installation work has been gained. The African collection was carefully overhauled, and a large amount of material previously unidentified was studied and placed in its proper grouping. This material is now divided into three groups: the first, intended for exhibition; the second, reserved for the study collection; the third, for exchange. The exhibition collection has been installed in twenty-seven standard cases fully labeled, and illustrated by maps and a considerable number of photographs. The most notable exhibit in this series is presented by the artistic cast bronze and ivory carvings from Benin, many of the specimens being of unusual excellence and rarity. The balance of the Northwest Coast of Africa, the Sudan, and the upper tributaries of the Nile, are represented by five cases. Collections from Somali-land and the Lake Region of Eastern Africa occupy 8 cases, illustrating different types of culture like that of the Arabicised tribes, the war-like Masai, and the nomadic Wandorobo. A very complete collection from the Ovimbundu and Zulu gives an instructive view of the life and industries of these most advanced tribes of southern Africa. Congo material is displayed in 6 cases, showing the life of the Pigmies, as well as of the metal-working Bantu stock. An interesting feature of the last mentioned collection is a large group of fetish objects and other articles relating to the highly developed ceremonial and religious life of those peoples. In their present arrangement, the African collections, though still far from being complete, give a vivid picture of the various cultures of the continent, and likewise illustrate well the interrelations of the different tribes. Further progress has been made in the installation of the Joseph N. Field South Sea Islands collection, 44 cases devoted to Melanesian ethnology having been completed. This material covers the following regions. The two islands Buka and Bougainville, belonging to the group of the Solomon Islands, are fully represented by 8 cases. Especially noteworthy in this exhibit are wood carvings including one large human statue; the peculiar balloon-shaped hats worn by the Matasese, the young men who are initiated into a secret society; the huge coiled baskets, wooden platters, heavy stone nut-crackers, and a complete series of stone implements, showing the different ways of hafting the axes. The central Solomons are represented by objects inlaid with pearl and by a large wooden bowl. Fourteen cases are devoted to New Ireland, with a display of huge ancestral images of wood and memorial carvings (from central New Ireland and the Gardner Islands), ancestral figures of stone, and a great variety of masks,

some very elaborate. The different types of clubs and spears, including those terminating in worked human bone, are completely represented. Native life on the island of New Hanover is shown in another case. The elaborately decorated clubs and spears of St. Matthias together with large ornamented combs, and woven mats and belts occupy two cases. The same number of cases illustrates the culture of Lihir, Aneri, Tanga, Nissan, small islands east of New Ireland, the manufacture of shell arm rings from Tanga and shell money from Nissan being especially noteworthy. Two further cases are concerned with Lord Howe, Mortlock, Tasman, and Sikaiana, small islands lying north of the Solomons, but showing a culture with Micronesian and Polynesian, rather than Melanesian affinities. New Britain is represented by a very complete collection, in sixteen cases, from the Gazelle Peninsula. It includes many valuable old specimens obtained and figured by Richard Parkinson, also a number of remarkable Baining and Sulka masks, numerous specimens from central and western New Britain as well as from the neighboring islands, showing a strong New Guinea influence. A representative collection from the southwest coast about Cape Merkus illustrates the life and industries of the people. There is a series of their finely carved wooden bowls, coiled baskets, painted bark-cloth, feather head-dresses used in dances, and personal ornaments. The Philippine material has been revised and partially reinstalled. The models of Chinese pagodas have been installed in three standard four-foot cases and eight special cases arranged in Hall 48 of the East Annex. This Hall was opened to the public at the end of the year. The Chinese gateway has been erected on the east side of the Rotunda.

In the Department of Botany the following cases have been installed, labeled and placed on exhibition: in the American Forestry Series: Sweet Buckeye; Fraser's Fir; Southern Red Cedar; Loblolly Bay; Silver Bell; Pennsylvania Cherry; Ogeche Lime; Water Gum; Black Cherry; and Basswood. Specimens, with their labels, sufficient for the installation of twelve other cases have been fully prepared and are ready to be put in place as soon as the cases for their accommodation are furnished. Installation in the herbarium cases has been sadly interfered with on account of lack of space in the rooms available to this section of the department. It has become necessary to remove from installation all specimens in the lower plant orders, wrap them up in bundles and store them away, in order to give up their place in the cases to families more frequently consulted. This has also been necessary in the case of newly arriving Eurasian plants, until the end of the year reveals over three hundred such bundles rendered unavailable for study or reference. A discouraging amount of time and labor had to be

wasted in shifting and reshifting installed specimens in order to make room for the installation of new material and keep the collection as available as possible in the cramped quarters they occupy. Space for the organization and preparation of the Elihu Hall herbarium was gained by shifting a number of exhibition cases into a hollow square on the exhibition gallery and connecting the case with the preparator's room.

In the Department of Geology three halls, Nos. 60, 61, and 62, which had been closed to the public for several years were reinstalled and reopened. In two of these halls are now exhibited numerous large, vertebrate fossils of Pleistocene age, including skeletons of the Cave Bear and large birds of New Zealand, the mastodon skull found at Yorkville, Illinois, and restorations of the giant sloth, large turtle, large armadillo or Glyptodon, and fossil shark jaws. Various bones of the mammoth and mastodon, small whales and Tertiary titanotheres are also shown in these halls, and a series of the large, corkscrew-like forms known as *Dæmonelix*. In addition, a model of the above-ground workings of the Shui kao Shan lead mine, Hunan, China, has been installed in Hall 60. This model covers an area of about 170 square feet. It is enclosed in a case thirteen feet square and placed on a base three feet high. The case and base were constructed at the Museum, the model itself was the gift of the Chinese Commission to the Panama-Pacific International Exposition. The model illustrates on a scale of 1:135 the plant at the surface of the mine, and the ore dressing works at which the ore is prepared for smelting. The plant was built by European trained men and illustrates the extent and variety of operations carried on in modern mining. A large specimen of the ore obtained at the mine accompanies the exhibit. To the third hall, Hall 62, of the group recently opened, the petroleum collection previously exhibited in Alcove 107 was transferred, with some additions. As now installed, the collection comprises nine wall cases, two pyramidal floor cases and two flat floor cases of specimens. Of these cases, five are devoted to the petroleums produced in different oil fields, one to a quantitative exhibit of the products of one barrel of petroleum, four to various finished products of petroleum, and three to specimens of petroleum-bearing sands and rocks and their characteristic fossils. To the space left vacant in Alcove 107 by the removal of the petroleum exhibit, five cases containing stone and iron meteorites were moved and fully reinstalled. One of these cases was devoted to Canyon Diablo meteorites, of which the collection contains a large number of specimens varying in weight from 1013 lbs. to a few ounces. The total weight of this meteorite thus exhibited is over 5,000 lbs. In other cases all the larger



COMMON WATER SNAKE.
Elaphe obsoleta (Forsk.)

COMMON WATER SNAKE.
Elaphe obsoleta (Forsk.)

LOANED BY
 THE N. W. HARRIS PUBLIC SCHOOL EXTENSION
 OF FIELD MUSEUM.

TYPE OF CASE LOANED TO PUBLIC SCHOOLS BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION
 OF FIELD MUSEUM.

stone and iron-stone meteorites were placed, the specimens being grouped so as to bring those of the same class together. At the same time the opportunity was improved to definitely group all the meteorites, the grouping being on the basis of a classification founded on structural features. In Hall 31 a number of series have been rearranged with or without the addition of new material. One of these is a collection of volcanic products which has been so reorganized as to exhibit the characteristic products of each locality in groups. At present, good series of the products of the volcanoes of Vesuvius, Popocatepetl, Kilauea, Sakurijima, the Auvergne region and many localities in the western United States are shown. A special addition made to the products of Vesuvius was a series of specimens of volcanic ash thrown out during the eruption of April, 1906. These specimens show the changes in the character of the ash during successive days of the eruption. Photographs of a recent eruption of Sakurijima were installed among the products of that volcano. Other additions made to the series of dynamical geological products in Hall 31 include six splendid specimens of zonal weathering which were collected by the Curator in Maine, specimens of dendrites similarly collected, a number of specimens of cone-in-cone structure, stylolites, etc., collected by the Curator in Illinois, and a number of specimens showing several varieties of weathering. Another change made in the installation of this hall was the removal to storage of the series of New York rocks and the installation in its place of collections illustrating the uses of lime and of borax. In the collection illustrating lime and its uses, a number of varieties of limestone and lime from various localities are shown and following these, illustrations of chemical and agricultural uses of lime and limestone, uses of lime for paints, plasters, and cements, medical uses of lime, etc. In the borax collection are shown various borax minerals, various refined boraxes, and illustrations of the uses of borax in the arts. Another collection prepared and installed in this hall was one illustrating sources and uses of potash. Various rocks and minerals containing potash in appreciable quantities are exhibited in this collection and many of the finished products from these rocks, including not only potash but alumina, sulphuric acid, etc. The collection illustrating magnesia and its uses was considerably enlarged and rearranged, additions of Indian and Grecian magnesite, raw and calcined, being made, also of metallic magnesium, hydraulic cements, magnesia packing, etc. To the sulphur collection were added some interesting specimens of molded sulphur received from China. Some additions were also made to the economic barite and fluorite collections. A magnetic compass was installed in connection with the large specimen of lodestone in Hall 30, the compass

being supported on a pivoted brass arm in such a manner that it can be moved by the visitor in a semi-circle about the lodestone. The attraction of the lodestone causes a reversal of the ends of the needle and a constant pointing of the needle towards the stone, thus illustrating its permanent magnetic properties. In Skiff Hall, a number of additional collections have been installed, space for introduction of new material having been gained by removal of some previously exhibited. In place of two cases of onyx, the case of products of coal received from the London, England, Gas Light and Coke Company was installed. This case contains over 200 large and showy specimens representing the products of coal, such as coke, ammonia compounds, carbolic acid, prussiates and cyanides, creosotes, dyes and pigments. The whole makes a brilliant and instructive exhibit and one of special interest at this time, since the domestic production of many of these compounds has become desirable in view of the difficulty of obtaining them from abroad. The exhibit is installed in a case received from the London Company, some alterations having been made in it to make it harmonize in appearance with the other cases in the hall. To other collections in the hall a large number of additions have been made, chiefly of material received from the Panama-Pacific International Exposition. The greatest of these additions has been made to the tin ore collection. The additions include the splendid series of South African tin ores obtained through the generous efforts of Mr. W. J. Chalmers, about an equal number of Bolivian tin ores, 15 specimens of Australian tin ores and some tin ores from scattering localities. Owing to increased interest in tungsten ores, this collection also was completely rearranged, and a full series from most of the important localities producing such ores at this time was procured and exhibited. The collection of gold and silver ores of Ontario has been reinstalled with the addition of specimens representing several of the newly discovered gold districts. Part of the copper ore collections have been revised, with the addition of specimens representing the "porphyry" ores of the United States, and typical ores of copper mining districts of Bolivia, South Africa and China. A series of Chinese ores has been added to the iron ore collection. Specimens from the Panama-Pacific International Exposition and from the material received from Mr. W. J. Chalmers have been installed with the ores of gold, silver, lead, tungsten, and mercury, thus materially strengthening these collections. A collection from the potash deposits of Utah illustrating the ores and their aluminum salts which are their by-products, has been installed with the aluminum ores collection. A complete skeleton of the American camel *Oxydactylus longipes*, of the lower Miocene period, was installed in a floor case in Hall 36.

This camel was remarkable for its size and slender structure, the slenderness being such as to make the skeleton difficult to mount. In order to obtain sufficient rigidity, steel sockets were set in the limb bones at intervals and these served as fastenings for pieces of half-round steel which were placed along the surfaces of the bones. In this way a firm but graceful mount was secured. The base of the mount was made of material imitative of the matrix in which the skeleton was found. In an adjoining case a fore leg of *Alticamelus*, another American camel remarkable for the size and length of its limb bones has been installed; and in still another case a number of skulls and limb bones of Miocene camels and horses have been placed. All of this material was collected by Museum expeditions in the western states. The skeleton of the saber tooth cat in this hall was transferred to a plaster base imitating the matrix from which it was taken. The series of Jurassic mollusks from Patagonia collected by Professor Salisbury has been installed in Hall 36, and a case of Devonian fossils has been brought from Hall 61 and installed in this hall. In the paleontological laboratory the cleaning and mounting of a skeleton of *Oxydactylus* has been completed; a fore limb of *Alticamelus* has been prepared and mounted; a skeleton of a small, Miocene, burrowing carnivore found in one of the peculiar corkscrew-like forms occurring in Nebraska has been prepared for mounting; two partial skeletons of the Oligocene three-toed horse, *Meshippus bairdii*, have been prepared, as have also a large skull of *Diceratherium* and fore limbs of the smallest Miocene horse, *Merychippus*; the mounting of a skeleton of a fossil wolf from the Los Angeles beds has been nearly completed and the skeleton of the saber tooth cat from the same locality has been transferred to a base imitative of the matrix from which the specimen was obtained.

In the Department of Zoology the reinstallation of the shell exhibit has been continued during the year. Seven cases of shells were installed, 10 of the new A-cases now being filled. Of this number 7 have been permanently labeled. Some idea of the amount of work required to install a case may be formed when it is stated that one of those just filled contains 2,829 shells, most of which has to be mounted in a special manner and which required 718 tablets and almost the same number of individual shelves for their installation. In the Division of Osteology 337 skulls and 12 skeletons were prepared. Three skeletons were also prepared for the exhibition collection. The usual precautions were taken against the depredations of insect pests and all collections were disinfected. Most of the exhibition cases are now provided with devices which permit disinfection without opening the case. In the serial collection of mammals on exhibition, rearrangement and elimination of

duplicates and imperfect specimens has been commenced. Early in the year material in the taxidermists' shop was thoroughly overhauled and a few old specimens of no value, were condemned and destroyed. The skin dresser has been occupied most of the time in preparing skins of large mammals recently obtained. The group of Alaska Moose has been finished and installed in an alcove of the west court. It is the largest single group thus far produced in the Museum shops and is undoubtedly the best representation of this splendid game animal in existence. In a case 24 feet in width and 12 feet in depth and provided with a large painted background the scene reproduced is of the interior of Kenai Peninsula, Alaska, with a foreground of poplars, willows, small spruce, and mixed low vegetation a background of lakes and streams and snow-clad mountains. Four animals are shown, an old bull, a young bull, an adult cow and a calf of the year. The skins of these are in the finest possible condition, having been personally collected, preserved, shipped, dressed and mounted by a taxidermist of the Museum force. The antlers of the old bull of this group are the largest of which there is authentic record, the total spread between outermost point being $78\frac{1}{8}$ inches. These "record" antlers have been in the possession of the Museum for some years and on account of their special interest it was decided to take them from storage and make them available to the public by placing them in this group even though it was necessary to associate them with the skin of an animal not the one which bore them originally. Therefore they were mounted with the skin of another old bull of very large size and the facts stated on the label. During the year work has progressed on other mammal groups notably the capybara and jaguar group which require the preparation of a large amount of artificial tropical vegetation. It is now almost ready for installation. Plans and preliminary models have been made for a new group of American Bison in which entirely fresh specimens of high quality will be used. The group formerly prepared under difficulties from relatively poor material has been dismantled. Living animals for the new group have been selected and as soon as they are in proper condition will be prepared for use by the Museum taxidermists, who will thus be able to take all necessary measurements and life studies. A few additions to the systematic exhibition of mammals have been made, the most important being a pair of Saiga antelope, a species from the steppes of western Asia having unusual amber-colored horns and long tubular overhanging nostrils. Other mammals added to this series include South American Cavies, the wild progenitors of Guinea pigs, African wild rats, and fresh specimens of North American hares. The fourth and final unit of the first four-section case of tropical





CHINESE GATEWAY CARVED FROM TEAKWOOD.
Made by the Orphanage of Sikkawei near Shanghai.

bird groups was finished and installed. The group shown consists of birds characteristic of the low tropics of north-central Brazil where one of the Museum's expeditions worked a few years ago. The most conspicuous of these are the large tropical American storks known as the Jabiru. Others included with them are ibises, sun bitterns, gallinules, and boatbills. Thirty-six mounted birds from Argentine and twenty from North America, including a Passenger Pigeon, were added to the serial exhibition collection.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

—At the close of the year 476 cases were available for circulation among the public schools, 86 cases having been installed during the year. Six cases were permanently withdrawn from the supply and sent to the Museum of History, Art and Science of Los Angeles. There are also many cases on hand in various stages of preparation and installation. Not only do the members of the staff of this Department install all of the specimens of birds, mammals, fishes, reptiles, and insects, but they collect and prepare them for installation as well. Nearly all of the butterflies and birds found in and around Chicago are represented either by specimens installed or by specimens that have been partially prepared for installation. In many of the cases in which birds, mammals and reptiles are shown, enlarged colored photographs of the habitat or of characteristic environments of the specimens, form backgrounds. These backgrounds add greatly to the naturalness of the taxidermy and to the realism of the accessories employed, and reduce the use and need of much of the latter.

Sufficient time has elapsed since the inauguration of this work to permit competent judgment being passed upon the physical merits of the exhibition cases. It is gratifying to report that the type of case used has met all requirements demanded of it. The claim for the secureness of the installation of all specimens is well supported by the fact that thirty-four installed cases were transported by freight to San Francisco and returned, and not in a single instance was it necessary to repair any damage and in but one instance was it necessary to reinstall a specimen—that one being of a friable nature. The number now on hand of empty cases of the four and ten inch types is so small that a requisition for additional new cases will be made within a short time. It is more than likely, owing to space limitations, that with additional new cases some method, other than that now in use, for caring for empty and installed cases will have to be adopted. Representatives of the principals of the Chicago public schools expressed a desire to have types of the extension cases placed on permanent exhibition in one of the rooms of the Board of Education.

The school authorities sanctioned this request and granted permission to make the exhibition and designated for that purpose a room used by the principals and teachers as a committee room. Plans for displaying them are being perfected. An exchange of cases will be made. In compliance with the request of the president of the American Association of Museums to have an exhibit of the Museum extension cases made at a meeting of the association held in Washington, D. C., May 15-18, four cases were sent. In conjunction with the exhibition of the cases, there was read a brief paper prepared by the Curator on "The Development of The N. W. Harris Public School Extension of Field Museum of Natural History." Several cases containing birds have been loaned for a brief period to the Chicago Art Institute for the purpose of study by classes in nature study. A most painstaking and thorough investigation of the methods of installing the cases and the system of recording and circulating them among the schools, was made by Professor Yaezo Wado of the Department of Natural Science, First National College, Tokio, Japan, with the view of introducing the same or similar methods in Japan. The Public Museum of Oakland, California has adopted for its extension work, cases and methods similar to those of this Department.

As an evidence of the value of the cooperation between The N. W. Harris Public School Extension of Field Museum of Natural History and the public schools of Chicago, the following letter from John D. Shoop, superintendent of schools, to Director Frederick J. V. Skiff, is offered:

"I deem it a duty as well as I esteem it a privilege to write you in testimony of the results that, in the past few years, have attended the closer cooperation that has been established between the public schools and the Museum.

"The bequest made by Mr. N. W. Harris has proved of great value to the schools. The exhibits that have been assembled under the direction of Mr. Simms are valuable factors in intensifying and enlarging the interest of the pupils in the spheres of industry and nature. I am certain that you will be pleased to know that the movement made possible through the benevolence of Mr. Harris is eventuating in so much of interest and profit to our public school system."

PHOTOGRAPHY AND ILLUSTRATION.—The following is a tabulation of the work performed in this section:

	Number of Negatives made	Number of Prints made	Number of Lantern Slides made	Number of Enlarge- ments made	Number of Negatives developed for Expe- ditions	Number of 6 1/2 x 8 1/4 Posi- tives made. Used in making large Negatives
General	16	61	..	..	..	..
Anthropology	232	146	18	..	..	..
Botany	10	61	..	..	10	..
Geology	22	68	..	10	..	4
Zoology	6	180	..	..	6	..
Harris Extension	6	7	..	..	..	..
Distribution . . . . .	..	56	..	..	..	..
Gift . . . . .	..	94	..	..	..	..
Sale . . . . .	..	137	2	..	..	..
Totals	292	810	20	10	16	4
Total number of Catalogue entries during year 1916						1,152
Total number of Catalogue entries to December 31, 1916						114,455
Total number of Record Books						20

PRINTING.—The number of labels and other impressions made by the Section of Printing is as follows:

	Exhibition Labels	Other Impressions
Anthropology	4,509	1,250
Botany	234	30,200
Geology	1,478	1,000
Zoology	2,560	150
Library . . . . .	.....	3,250
General . . . . .	.....	17,730
N. W. Harris Public School Extension	1,036	2,950

Herewith are also submitted financial statements, list of accessions, names of members, etc., etc.

FREDERICK J. V. SKIFF, Director.

FINANCIAL STATEMENT

RECEIPTS AND DISBURSEMENTS

January 1, 1916, to December 31, 1916

RECEIPTS

Cash in Treasurer's hands, General Fund, December 31, 1915 . . .	\$4,126.39
Cash in Treasurer's hands, New Exhibition Cases Fund, December 31, 1915	917.71
Cash in Treasurer's hands, Endowment Sinking Fund, December 31, 1915	36.00
Petty Cash on hand, December 31, 1915	739.95
Dues of Life Members	23,600.00
Dues of Annual Members	990.00
Admissions and Check Rooms	5,413.35
Sale of Guides (Profit)	220.25
South Park Commissioners	15,000.00
Interest on Investments and Bank Balances	9,652.15
Field Endowment Income	131,500.00
Field Endowment Sinking Fund	1,199.61
Field Endowment Sinking Fund Investments retired	309.26
Field Endowment Sinking Fund Income	259.32
Life Memberships Fund Income	327.97
Life Memberships Fund Investments retired	3,907.88
New Exhibition Cases Fund Investments retired	4,850.00
New Exhibition Cases Fund Income	429.39
New Building Moving and Furnishing Fund Income	325.00
Stanley Field Plant Reproduction Fund	100.00
Stanley Field Ornithology Fund	1,000.00
Arthur B. Jones Buffalo Group Fund	472.72
H. W. Jackson Library Fund Income	40.00
Donations:	
W. J. Chalmers	\$ 20.00
Arthur B. Jones	60.00
Homer E. Sargent	200.00
Sale of Picture Postal Cards	661.92
Guards' Uniform Account	311.50
Sundry Receipts	68.33

\$206,738.70

DISBURSEMENTS

Salaries		\$71,161.98
Guard Service		12,006.13
Janitor Service		6,807.34
Fire Protection		3,306.64
Light and Heat		13,132.28
Repairs and Alterations:		
Wages — Carpenters, Painters, Roofers, etc.	\$7,799.01	
Materials used — lumber, paints, oils, glass, etc.	554.83	8,353.84
Furniture and Fixtures:		
Cases and Bases	5,365.00	
Office Furniture and Herbarium Cases	845.00	6,210.00
The Library:		
Books and Periodicals	805.60	
Binding	552.85	
Sundries	136.98	1,495.43
Collections, etc., purchased		14,848.28
Installation expense		2,158.79
Expeditions		18.55
Publications		1,587.21
Picture Postal Cards		232.65
Sections of Photography and Printing — Supplies		323.44
General Expense Account:		
Freight, Expressage and Teaming	\$1,211.65	
Stationery, Postage and Telephone	826.48	
Liability Insurance	663.52	
Sundries	1,500.09	4,201.74
Stanley Field Plant Reproduction Fund		78.55
Arthur B. Jones Buffalo Group Fund		125.00
Stanley Field Ornithology Fund		925.00
H. W. Jackson Library Fund — Investments		20.00
New Building Moving and Furnishing Fund — Investments		23,400.00
Life Memberships Fund — Investments		26,321.25
Picture Postal Cards Fund — Certificate of Deposit		375.76
Endowment Sinking Fund — Investments		1,010.00
General Fund Investments (In Suspense)		2,225.00
		<u>\$200,324.86</u>
In Treasurer's hands, December 31, 1916:		
General Fund	\$2,188.49	
New Exhibition Cases Fund	791.60	
Life Memberships Fund	1,514.60	
Sundry other Funds	1,179.20	5,673.89
Petty Cash on hand, December 31, 1916		739.95
		<u>\$206,738.70</u>

ATTENDANCE AND RECEIPTS FROM JANUARY 1 TO DECEMBER 31, 1916

ATTENDANCE.

Paid Attendance:

Adults	18,088	
Children	1,827	19,915

Free Admission on Pay Days:

School Children	5,933	
Students	3,179	
Teachers	605	
Members:		
Corporate	29	
Annual	31	
Life	6	
Officers' Families	41	
Special	84	
Press	2	9,910

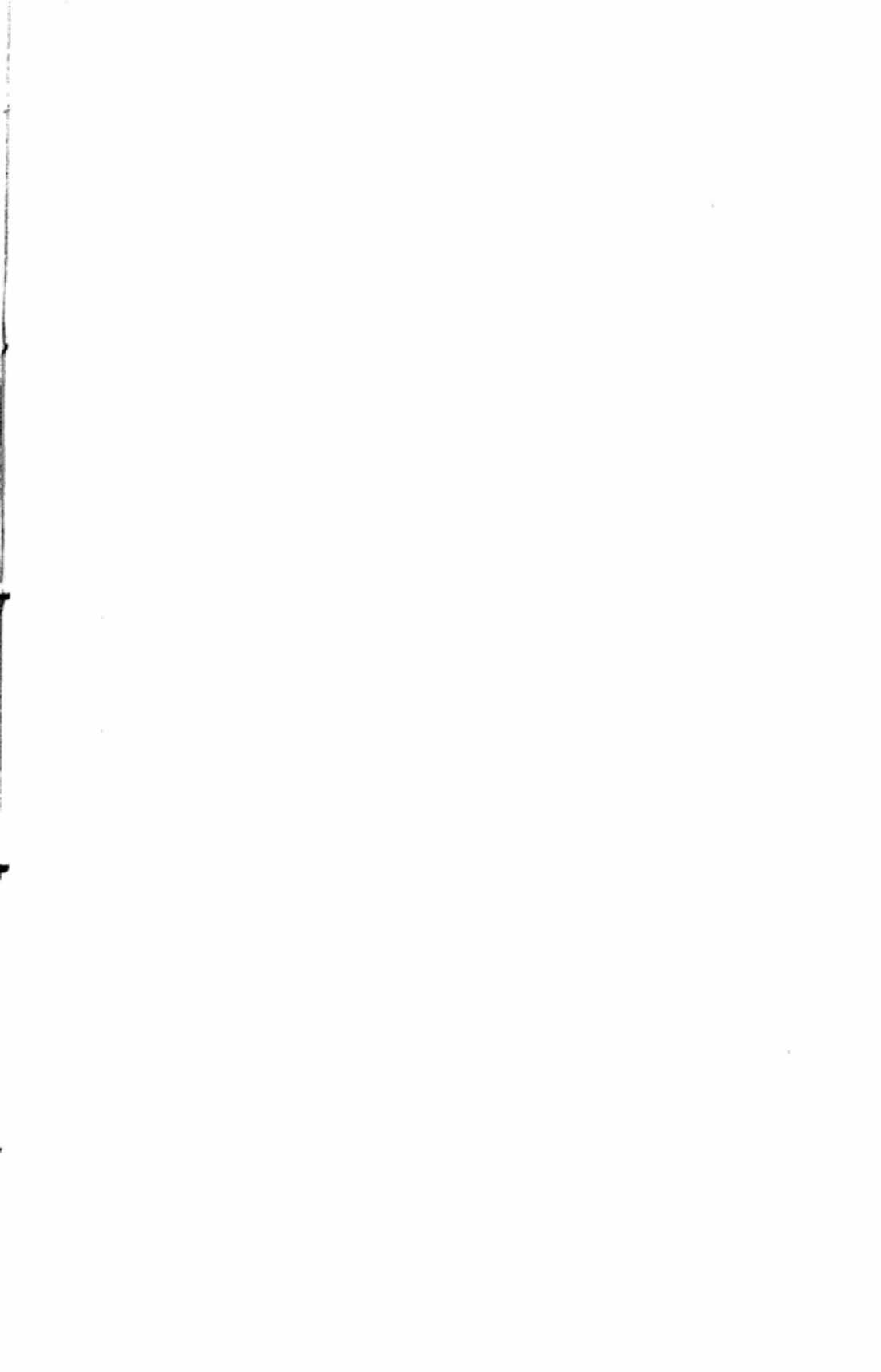
Admissions on Free Days:

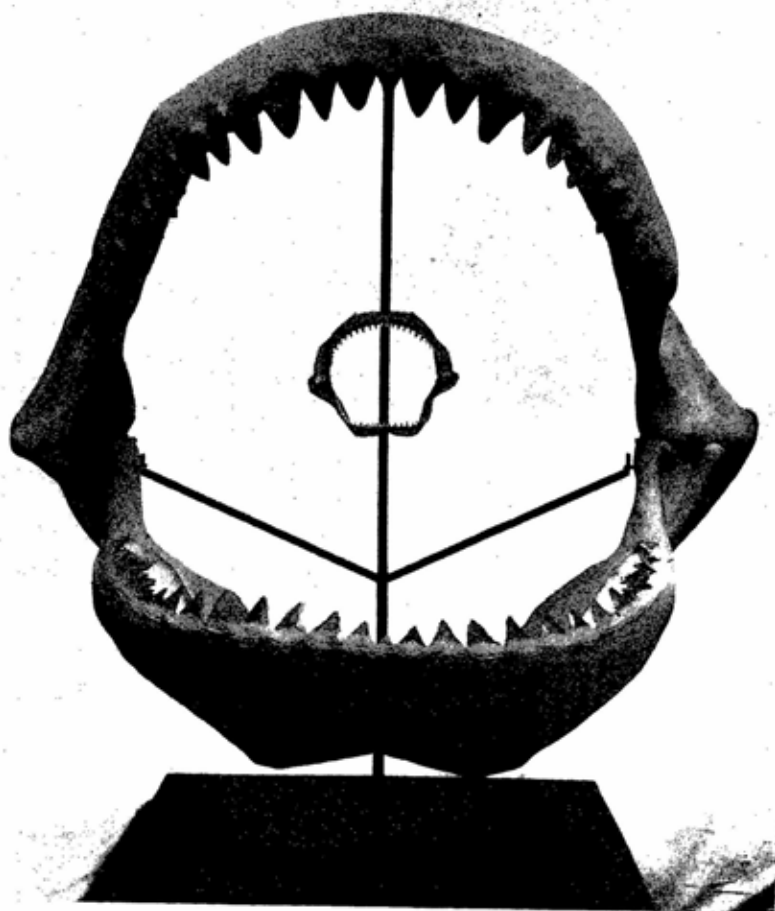
Saturdays	40,779	
Sundays	136,439	177,218

Total Attendance	207,043
Highest Attendance on any one day (July 9, 1916)	7,686
Highest Paid Attendance on any one day (July 4, 1916)	640
Average Daily Admissions (364 days)	568
Average Paid Attendance (258 days)	77

RECEIPTS.

Guides sold — 881 at 25 cents each	\$ 220.25
Articles checked — 14,159 at 5 cents each	707.95
Admissions	4,705.40
	<hr/>
	\$5,633.60





RESTORATION OF JAW OF FOSSIL SHARK (*Carcharodon*), WITH JAW OF MODERN SHARK (WITHIN) FOR COMPARISON.

ACCESSIONS.

DEPARTMENT OF ANTHROPOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

AYER, E. E., Chicago.

38 objects of stone comprising milling stones, small mortar, pestles, balls, celts, grooved axes and hammers—near Phoenix, Arizona.

6 buckskin dance skirts, 2 dance aprons, 3 ceremonial feather headbands, 1 basket quiver—California.

BARRETT, MRS. S. E., Chicago.

1 large green quartz image—Mexico.

CHINESE COMMISSION AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, California.

1 sulphur statuette—Shansi Province, China.

8 musical instruments—China.

DURNO, W. F., Chicago.

4 Japanese books on sword-guards—Japan.

FIELD, STANLEY, Chicago.

1 chert spear-head—Lake Bluff, Illinois.

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

1 carved teakwood gateway and 84 models of Chinese pagodas—Sikkawei, near Shanghai, China.

1 Tibetan silver image, inlaid with pearls, turquoises, and corals, made in Lhasa—Tibet.

1056 flint implements and 20 casts—Northern France.

1 banded slate celt—Bradyville, Tennessee.

2 ancient Buddhist stone-relief sculptures—Peshawar, India.

800 specimens archaeological material—Mexico.

7 Navaho blankets—Fort Wingate, New Mexico.

FREER, CHARLES L., Detroit, Michigan.

Reproduction of famous landscape roll by Ma Yüan, with pamphlet—China.

GUNSAULUS, DR. FRANK W., Chicago.

926 Japanese sword-guards and sword furniture.

HOLBROOK, MISS FLORENCE, Chicago.

4 specimens Eskimo boots, gloves, and pocket-book, of sealskin—Greenland.

MAC DOWELL, C. H., Chicago.

1 stone celt—Malmö, Sweden.

MARTIN, HENRI, Paris, France.

100 fragments of bones, human and animal, and 125 specimens of flints—La Quina and St. Croix, France (exchange).

1 cast of prehistoric skull (exchange).

- MOORE, CLARENCE B., Philadelphia, Pa.
 1 plaster cast of monolithic hatchet — Moundville, Alabama.
- NEUBERGER, LOUIS, Chicago.
 1 bow and 6 arrows — Philippines.
- PARKER, LUTHER, San Francisco, Cal.
 125 ancient fragments of pottery, skulls, and other material from caves;
 basketry — Philippine Islands.
- SARGENT, HOMER E., Chicago.
 2 fine old Navaho blankets, one of bayeta.
 162 specimens of prehistoric pottery — Casas Grandes, Chihuahua, Mexico.
 20 feather plumes used in deer-skin dance of the Karok — California.
- SILVA, DR. SIMOENS DA, Rio Janeiro, Brazil.
 1 axe, 1 grooved stone implement, 1 pestle of diabase — Brazil (exchange).
- SMITH, FRED. M., Chicago.
 1 Indian saddle complete with stirrups — Nebraska (exchange).
- SMITH, MRS. E. S., Chicago.
 Beaded shoulder bag and beaded belt — Ojibway Indians.
- SPRAGUE, ALBERT A., 2nd, Chicago.
 1 grooved stone axe — Chicago.
- STARKEY, MRS. HORACE M., Chicago.
 1 feather cape — Sandwich Islands.

DEPARTMENT OF BOTANY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

- AMES, OAKES, North Easton, Mass.
 258 herbarium specimens — Philippine Islands (exchange).
- ARGENTINE REPUBLIC COMMISSION AT PANAMA-PACIFIC
 INTERNATIONAL EXPOSITION, San Francisco, Cal.
 18 planks of various woods, 3 Quebracho products, 24 herbarium speci-
 mens — Argentine Republic.
- BALL, CARLETON R., Washington, D. C.
 30 herbarium specimens — various localities.
- BRENCKLE, J. F., Chicago.
 82 herbarium specimens — various localities.
- COPULOS, MILTON D., Chicago.
 4 photographs of plant reproductions.
- DE SELM, JUDGE ARTHUR W., Kankakee, Ill.
 1 herbarium specimen — Illinois.
- ELK TANNING COMPANY, Ridgeway, Pa.
 7 specimens tan barks — Bahia, Brazil.
- FIELD MUSEUM OF NATURAL HISTORY.
 Collated by C. F. Millspaugh:
 102 illustrations and descriptions of plants mounted as herbarium specimens.
 Collected by O. E. Lansing, Jr., and E. E. Sherff:
 92 herbarium specimens — Illinois.
- Purchases:
 398 herbarium specimens — Alberta, Canada.
 485 herbarium specimens — Philippine Islands.

- 371 herbarium specimens — California.
- 151 herbarium specimens — Philippine Islands.
- 335 herbarium specimens — Florida.
- FILEK, FRANK R., Chicago.
 - 46 herbarium specimens — Illinois.
- GAUMER, GEORGE F., Izamal, Yucatan, Mexico.
 - 314 herbarium specimens — Yucatan.
- GRECIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.
 - 4 olive products — Greece.
- GRANT, J. M., Sequim, Washington.
 - 76 herbarium specimens — Washington (exchange).
- HALL, ELIHU, FAMILY OF, Athens, Ill.
 - The private herbarium of Elihu Hall.
- HAWLEY, MRS. HELEN D., Cedars, Canada.
 - Her private herbarium — various localities.
- HANSEN, A. A., State College, Pa.
 - 1 herbarium specimen — Pennsylvania.
- HYNES, J. A., Chicago.
 - 1 skeletonized leaf (*Magnolia macrophylla*) — Germany.
- JOHNSON, FRANK W., Chicago.
 - 77 herbarium specimens — Michigan.
- KING, MISS ANNA A., Highland Park, Ill.
 - 397 herbarium specimens — Kentucky.
- MARSH, C. D., Salina, Utah.
 - 3 herbarium specimens — Utah.
- MILLSPAUGH, C. F., Chicago.
 - 30 herbarium specimens — Wisconsin.
 - 9 specimens seeds — market.
 - 2 specimens seeds — various localities.
 - 1 plant description.
 - 1 drawing — seeds of *Salix*.
- MILLSPAUGH, C. F., and LANSING, O. E., JR., Chicago.
 - 22 herbarium specimens — Illinois and Indiana.
- NEW YORK BOTANICAL GARDEN, New York City.
 - 7 photographs of herbarium specimens — Cuba (exchange).
 - 1442 herbarium specimens — various localities (exchange).
- PARISH, S. B., San Bernardino, Cal.
 - 1 herbarium specimen — California.
- PEACOCK, MISS BESS REED, Roswell, New Mexico.
 - 11 herbarium specimens — New Mexico.
- SHERFF, EARL E., Chicago.
 - 25 herbarium specimens — various localities.
- U. S. NATIONAL HERBARIUM, Washington, D. C.
 - 5 photographs of type species — various localities (exchange).
 - 410 herbarium specimens — various localities (exchange).
- UNIVERSITY OF CALIFORNIA, Berkeley, Cal.
 - 129 herbarium specimens — various localities (exchange).

DEPARTMENT OF GEOLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ALABASTER ART CO., Chicago.

2 statuettes, plain and bronze finish.

ALEXANDER, W. B., Scales Mound, Ill.

20 specimens vanadinite — near Tucson, Arizona.

AMERICAN BRONZE CO., Berwyn, Pa.

3 specimens bronze — Berwyn, Pa.

AMERICAN COAL PRODUCTS CO., New York City.

Chart showing products derived from coal.

AMERICAN SHEET AND TIN PLATE CO., Chicago.

3 specimens showing manufacture of tin and terne plate.

ARMOUR FERTILIZER WORKS, Chicago.

13 specimens of alunite and products, 2 specimens synthetic nitrogen products — various localities.

ART STONE CO., THE, Waynesboro, Pa.

4 specimens scagliola — Waynesboro, Pa.

AUSTRALIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

61 specimens of ores and minerals — New South Wales.

BARRETT COMPANY, New York City.

1 coal tar "tree."

BASS, W. W., Grand Canyon, Arizona.

3 specimens copper and silver ores, 1 specimen asbestos — Grand Canyon, Ariz.

BOLIVIAN COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

80 specimens ores and minerals — Bolivia.

BRANT, A. J., South Porcupine, Ontario.

1 specimen gold ore — Porcupine District, Ontario.

1 specimen gold ore — Baston Creek, Ontario.

CHAMBER OF COMMERCE, Chloride, Arizona.

75 specimens ores — Chloride District, Ariz.

CHALMERS, W. J., Chicago.

2 tourmaline crystals — Mesa Grande, Cal.

1 specimen crystallized gold — French Guiana.

CHINESE COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

291 specimens ores and minerals and model of Shui Kao Shan lead mining and ore dressing works — China.

CORY, C. B., Chicago.

1 specimen marl — Oconto Co., Wis.

CROWN POINT SPAR CO., Crown Point, N. Y.

4 specimens pegmatite and 6 specimens crushed pegmatite — Essex Co., N. Y.

EMERSON, J. H., Porcupine, Ontario.

1 specimen asbestos — Porcupine District, Ont.

FIELD MUSEUM OF NATURAL HISTORY.

Collected by O. C. Farrington:

- 8 specimens fossil ferns, 24 specimens cone-in-cone, stylolites, etc., 5 specimens hydraulic lime, 2 specimens shale—LaSalle Co., Ill.
- 33 specimens red and green tourmaline, beryl, herderite, lepidolite, garnet, etc., 18 specimens dendrite on quartz and beryl, 8 specimens concentric weathering, 16 miscellaneous—Oxford Co., Maine.

Collected by H. W. Nichols:

- 1 specimen river pebble—Fox River, Ill.
- 4 specimens quartz veins and 3 specimens rocks—Porcupine District, Ont.
- 19 specimens porphyry copper ores, gypsum, breccia, fossil shells and corals—Arizona and New Mexico.

Purchases:

- 1 meteorite—Plainview, Texas.
- 4 specimens meteorites—various localities.
- 1 iron meteorite—Batavia, N. Y.
- 8 specimens australites—Sydney, Australia.
- 3 specimens agrite—Germany.
- 1 section Cookeville meteorite—Cookeville, Tenn.

FULLER'S EARTH CO., Somerville, Tex.

- 1 specimen fuller's earth—Somerville, Tex.

GALLAGHER, J. F., Chicago.

- 25 specimens mineral abrasives and rocks—various localities.
- 1 specimen fibrous serpentine—Rudolph, Wis.

GARDEN CITY SAND CO., Chicago.

- 1 specimen hydrated lime, 4 specimens cement facings, 1 specimen artificial Caen stone.

GOVERNOR AND COURT OF DIRECTORS, GAS LIGHT AND COKE CO., London, England.

- Collection illustrating by-products of gas manufacture, with case—London, England.

GREEK COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

- 315 specimens ores and mineral products—Greece.

HEATH, C. L., South Porcupine, Ontario.

- 4 specimens gold ore—Tashota, Kowkash District and Swastika, Ont.

HIGMAN, W. G., South Porcupine, Ontario.

- 1 specimen scheelite—Porcupine District, Ont.

HOTCHKIN, M. W., Kirkland Lake, Ontario.

- 1 specimen gold ore—Tough-Oakes Mine, Ont.

HUGHES, ROBERT W., Miami, Arizona.

- 4 specimens chalcocite pseudomorph after pyrite—Miami, Ariz.

INDIANA QUARRIES CO., Bedford, Indiana.

- 4 specimens lime and dressed limestone—Bedford, Ind.

JACKSON, ALLEN W., Temagami, Ontario.

- 1 specimen silver ore—Cobalt, Ont.

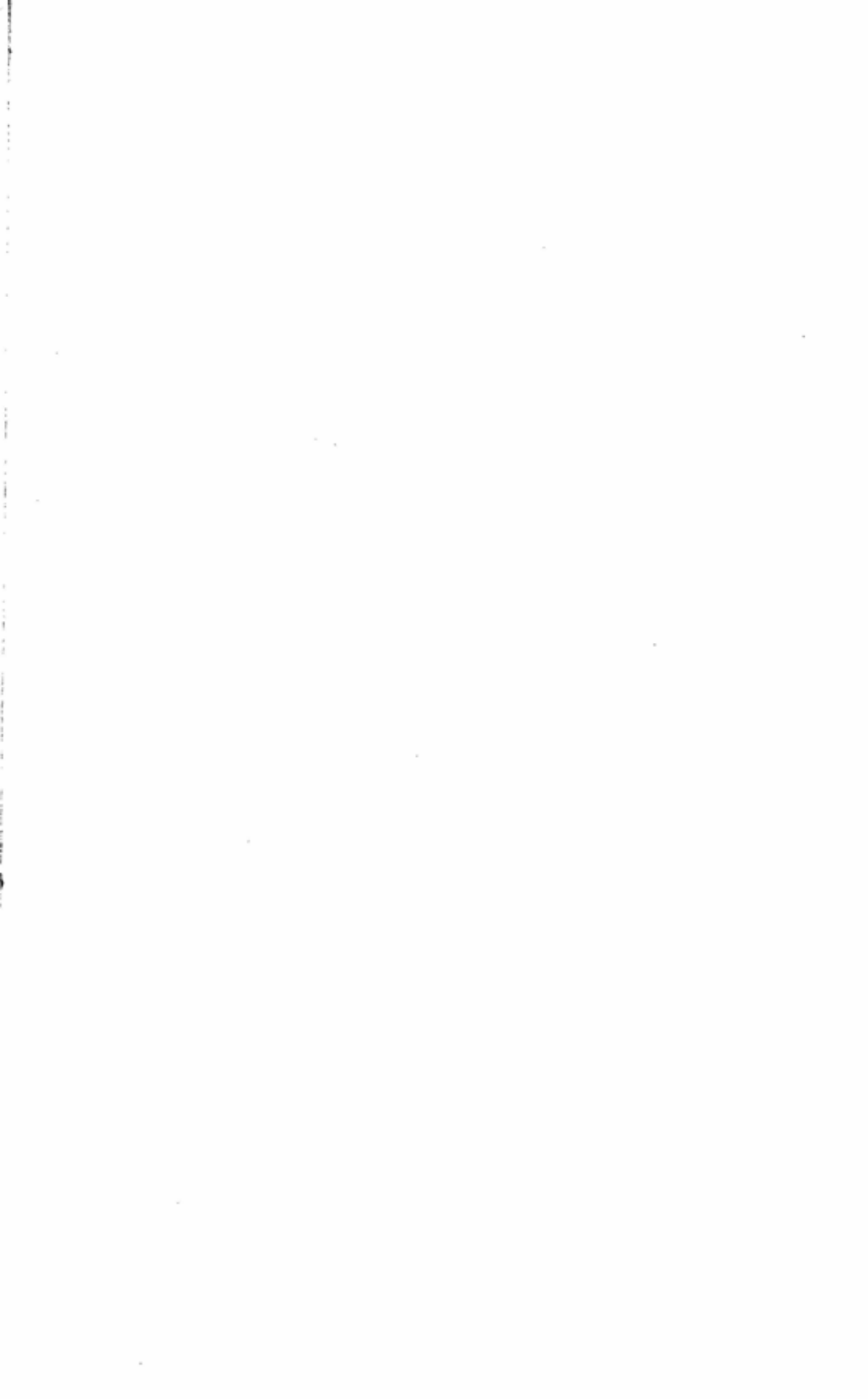
JEWELL, FRED, Osborn, Kansas.

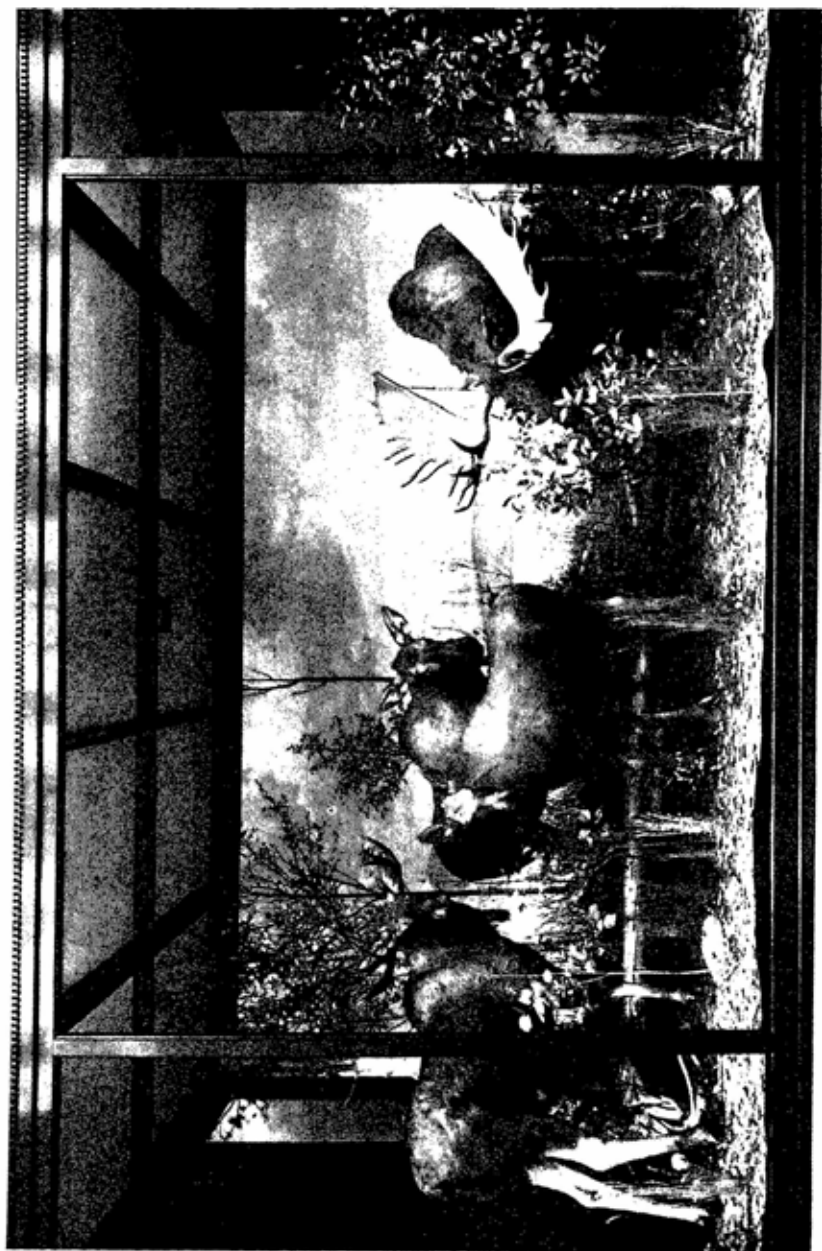
- 1 section of ammonite—near Harlan, Kas.

KNIGHT, S. H., Laramie, Wyoming.

- 3 specimens orendite and wyomingite—Leucite Hills, Wyo.

- LEEUEWPOORT (AFRICAN FARMS) TIN MINES, LTD.**— Leeuwpoort,
 Transvaal, South Africa.
 3 specimens tin ores — Leeuwpoort, Transvaal, So. Africa.
- LONG, TONY, Chicago.**
 Fossil trilobite — Thornton, Ill.
- LOUISVILLE CEMENT CO.,** Milltown, Indiana.
 4 specimens lime and limestone — Milltown, Ind.
- MAC DOWELL, C. H., Chicago.**
 2 specimens molybdenite — Peru.
- MARSH, C. H., Marshfield, Oregon.**
 1 specimen melanterite — Beaver Hill, Ore.
- MARTIN, F. E., Chicago.**
 1 specimen barite — Elizabethtown, Ill.
- McALLISTER, MRS. JOHN, North Waterford, Maine.**
 1 specimen diatomaceous earth — North Waterford, Me.
- MESSINA DEVELOPMENT COMPANY, LTD.,** Messina, Transvaal, South Africa.
 3 specimens copper ores — Messina, Transvaal, So. Africa.
- MOON, MRS. C. P., Chicago.**
 15 specimens rocks and minerals—various localities.
- MORONEY, JOHN J., Chicago.**
 2 specimens paper clay — near Macon, Ga.
- MOSELEY, E. L., Bowling Green, Ohio.**
 8 specimens fossil shells, fossil coral, celestite and silver ore — Ohio and Nevada.
- NEW ZEALAND COMMISSION AT PANAMA-PACIFIC INTERNATIONAL EXPOSITION,** San Francisco, Cal.
 Restoration of Moa — New Zealand.
- NICHOLAS, DR. F. C., New York City.**
 2 specimens iron ores — Nogales, Ariz.
- NORTON LABORATORIES, INC., Lockport, N. Y.**
 1 bar metallic magnesium.
- PATNAUDE, L. N., Platteville, Wisconsin.**
 1 specimen zinc ore — Klar-Piquette Mine, Platteville, Wis.
- PATTEE, FRED, Chicago.**
 1 specimen asbestos — near Casper, Wyoming.
- PIONEER ASPHALT COMPANY, Lawrenceville, Illinois.**
 5 specimens asphalt products.
- PRUDEN, HARRY B., Chicago.**
 1 specimen powdered coal — Chicago.
- ROBINSON, C. H., Normal, Illinois.**
 34 specimens wind-polished pebbles — Musk Rat Canyon, Wyo.
- RODDY, F. JUSTIN, Millersville, Pa.**
 13 specimens stream concretions — Little Conestoga Creek, Millersville, Pa. (exchange).
- ROOIBERG MINERALS DEVELOPMENT COMPANY, LTD., Rooiberg,**
 Transvaal, So. Africa.
 8 specimens tin ores — Rooiberg, So. Africa.
- RUEL, J. G., Chicago.**
 12 specimens Indiana limestone — Bedford, Ind.
 3 specimens soils — near Pensacola, Fla.





GROUP OF ALASKAN MOOSE *alces americanus gigas* (MILLER).

SALA, C. A., Chicago.

- 12 specimens crystallized topaz, transparent beryl, crystallized tourmaline
— Mesa Grande, Cal.

SALISBURY, R. D., Chicago.

- 47 specimens fossil shells — Piedra del Aquila, Neugnen, Patagonia.

SCHROTT, FRED L., Salt Lake City, Utah.

- 2 specimens gold ore and 1 specimen cinnabar — Stanley, Idaho.

SHNABLE AND QUINN, Blue Island, Ill.

- 1 specimen orthoceras annulatum, 1 specimen cyrtoceras — Blue Island, Ill.

SPRAGUE, ALBERT A., II, AND PORTER, GEORGE F., Chicago.

- 150 specimens wind-polished pebbles — Musk Rat Canyon, Wyo.

STE. GENEVIEVE LIME COMPANY, St. Louis, Mo.

- 3 specimens lime and limestone — Ste. Genevieve, Mo.

THURSTON, DR. FREDUS A., Chicago.

- 1 specimen stratified clay — Parry Sound, Ont.

TITANIUM ALLOY MANUFACTURING COMPANY, Niagara Falls, New York.

- 2 specimens ferro-titanium alloys, 1 specimen metallic titanium.

TRANSVAAL CONSOLIDATED LAND AND EXPLORATION COMPANY, LTD., Johannesburg, So. Africa.

- 9 specimens tin ores — Mbabane, Swaziland, So. Africa.

U. S. NATIONAL MUSEUM, Washington, D. C.

- 1 etched section of Dalton meteorite — Dalton, Ga. (exchange).

- 71 grams Lake Okechobee meteorite — Lake Okechobee, Fla. (exchange).

UNITED STATES TUNGSTEN CORPORATION, Ely, Nevada.

- 1 specimen rich tungsten ore — Ely, Nev.

WESTON, RALPH C., Los Angeles, Cal.

- 1 specimen gold ore — Oatman District, Ariz.

- 9 specimens rocks and minerals — Oatman District, Ariz.

WHITEHALL, C. C., Silver City, New Mexico.

- 4 specimens invertebrate fossils — Silver City, New Mexico.

WISCONSIN ZINC COMPANY, Platteville, Wis.

- 2 specimens blende and galena — Empire Mine, Platteville, Wis.

WOODVILLE LIME AND CEMENT COMPANY, Toledo, Ohio.

- 3 specimens limestone and lime — Woodville, Ohio.

ZAAIPLAATS TIN MINING COMPANY, LTD., Sterkwater, Potgietersrust, Transvaal, So. Africa.

- 16 specimens tin ores — Sterkwater, Potgietersrust, Transvaal, So. Africa.

DEPARTMENT OF ZOÖLOGY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

ARGENTINE COMMISSION, PANAMA-PACIFIC INTERNATIONAL EXPOSITION, San Francisco, Cal.

- 76 birds, 1 mammal — Argentina, So. Amer.

- 57 mammal skins — Argentina, So. Amer.

AVINOFF, ANDREW, New York City.

- 17 butterflies — Kashmir, India (exchange).

118 FIELD MUSEUM OF NATURAL HISTORY — REPORTS, VOL. V.

BARNES, JUDGE R. M., Lacon, Ill.

1 Blue Goose.

BRANDLER, CHARLES, Chicago.

1 weasel, with skull — North Branch, Lake Co., Minn.

CHAVES, DIOCLECIANO, Managua, Nicaragua.

152 butterflies and moths — Managua, Nicaragua.

CLARK, B. PRESTON, Boston, Mass.

63 Hawk moths — various localities (exchange).

COLLINS-DAY EXPEDITION.

215 bird skins — South America.

DERBY, W. M., Chicago.

1 hybrid duck.

DOHMEN, U. A., Chicago.

1 scorpion — Chicago.

ECKSTROM, FANNIE H., Brewer, Me.

1 Star-nosed Mole.

EVANS, CHARLES L., Chetek, Wis.

1 Star-nosed Mole — Wisconsin.

FARRINGTON, O. C., Chicago.

8 specimens shells (16-valves) — Lake Keewaydin, Stoneham, Me.

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

1 Alaska red fox.

1 egg, *Aepyornis maximus* — Madagascar.

113 mammals (skins and skulls), 22 mammals in alcohol — Bolivia.

175 bird skins — various parts of Europe.

3 weaver birds' nests — Ambala, The Punjab, British India.

3 prairie hares — Kansas.

FRIESSER, JULIUS, Chicago.

1 Long-billed Marsh Wren (*Telmatodytes palustris*) — Chicago.

GETZ, GEORGE F., Chicago.

1 dromedary — Damascus.

GUNDER, J. D., Chicago.

1 horn-tail — Yellowstone National Park.

HARRIS, N. W., PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM,
Chicago.

42 flies, beetles, sawflies and gall insects — Northern Indiana and Illinois.

HILL, CHARLES A., San Francisco, Cal.

1 beetle and 1 velvet-ant — Los Angeles and Orange Co., Park, Cal.

LAUFER, BERTHOLD, Chicago.

2 beetles — China.

LEOPOLD, N., JR., Chicago.

1 praying-mantis — Elkins Park, Virginia.

LILJEBLAD, E., Chicago.

8 moths and beetles — Northern Illinois and Indiana.

LINCOLN PARK ZOO, Chicago.

1 mandrill.

- MAIN, W. W., Maryhill, Washington.
1 nighthawk and cliff swallow's nest and eggs — Maryhill, Wash.
- McGRANER, A. C., Ancon, Panama.
1 scorpion and 5 snakes — head waters of Chagres River, Panama.
- OWEN, CHARLES L., Chicago.
9 beetles — Chicago.
- OWEN, V. W., Los Angeles, Cal.
14 dragonflies, bugs, grasshopper and katydid — Cochise Co., Ariz.
- PRAY, L. L., Chicago.
1 raccoon and one black squirrel (exchange).
- SKINNER, MRS. JANE B., Chicago.
1 mounted peacock.
- SODERBERG, MISS ELSIE, Chicago,
1 King Rail — Chicago.
- STAUFFER, D. L., Chicago.
1 Diamond rattlesnake — near San Antonio, Tex.
- STODDARD, H. L., Chicago.
1 Long-tailed Jaeger — Dune Park, Porter Co., Ind.
3 cicadas — Miller, Indiana.
- STUMP, MRS. H. E., Chicago.
2 mounted California quail.
- WALKER, ERNEST P., Wrangell, Alaska.
37 Alaskan mammals (exchange).
- WALTERS, L. L., Chicago.
1 chipmunk — near Jordan, Montana.
- WEBER, C. M., Balabac, P. I.
1 mouse deer and one civet — Philippine Islands.
- WILLARD, F. C., Tombstone, Ariz.
1 skin of fawn of white-tailed deer — near Tombstone, Arizona.
1 assassin bug — Tombstone, Arizona.
- WILLIAMSON, E. B., Bluffton, Ind.
2 Great-horned Owls and 1 Red-tailed Hawk.
- WOLCOTT, A. B., Chicago.
1 fly and 1 bug — Chicago.
- WOODBURY, FRANCES S., Chicago.
1 alligator and 1 fish — Florida.

SECTION OF PHOTOGRAPHY

(ACCESSIONS ARE BY GIFT UNLESS OTHERWISE DESIGNATED.)

FIELD MUSEUM OF NATURAL HISTORY.

Made by the Section:

292 negatives of Museum specimens, etc., 860 prints and lantern slides.

GUNSAULUS, FRANK W., Chicago.

1796 negatives of sword guards.

NICKERSON, MISS G., Pasadena, Calif.

20 photographs of California Indians.

THE LIBRARY

BOOKS, PAMPHLETS, AND SERIALS

(ACCESSIONS ARE BY EXCHANGE UNLESS OTHERWISE DESIGNATED)

ALABAMA

Geological Survey, University 2

ARIZONA

Agricultural Experiment Station, Tucson 2

CALIFORNIA

Agricultural Experiment Station, Berkeley 2

California Academy of Sciences, San Francisco 2

California State Board of Forestry, Sacramento 1

California University, Berkeley 13

Cooper Ornithological Club, Hollywood 2

Leland Stanford Junior University, Stanford University 2

Lorquin Natural History Club, Los Angeles 4

Panama Pacific International Exposition, San Francisco (gift) 100

Pioneer Western Lumberman, Sacramento (gift) 1

Pomona College, Claremont 1

San Diego Society of Natural History 1

Southern California Academy of Sciences, Los Angeles 1

State Mining Bureau, Sacramento 6

COLORADO

Agricultural Experiment Station, Fort Collins 11

Colorado College, Colorado Springs 2

Colorado Geological Survey, Boulder 8

Colorado Museum of Natural History, Denver 2

Colorado School of Mines, Golden 10

Colorado Scientific Society, Denver 2

State Historical and Natural History Society, Denver 1

CONNECTICUT

Agricultural Experiment Station, New Haven 5

American Oriental Society, New Haven 1

Connecticut Academy of Arts and Sciences, New Haven 2

Hartford Public Library 2

State Forester, Hartford 1

Wadsworth Athenaeum, Hartford 1

Yale University, New Haven 4

DELAWARE

Agricultural Experiment Station, Newark 1

FLORIDA

Agricultural Experiment Station, Tallahassee 4

State Geological Survey, Tallahassee 1

GEORGIA

Geological Survey, Atlanta 1

HAWAIIAN ISLANDS

Agricultural Experiment Station, Honolulu 2

Bernice Pauahi Bishop Museum, Honolulu 2

Board of Agriculture and Forestry, Honolulu 1





JADE ANTIQUITIES FROM MEXICO.

IDAHO

Inspector of Mines, Boise	1
University of Idaho, Moscow	1

ILLINOIS

Art Institute of Chicago	2
Cement World Publishing Company, Chicago (gift)	1
Chicago Historical Society	1
Chicago Public Library	2
Dial Publishing Company, Chicago	2
Forest and Stream Publishing Company, Chicago	2
Hardwood Record, Chicago (gift)	2
Illinois Audubon Society, Chicago (gift)	1
Inland Printer Publishing Company, Chicago	2
John Crerar Library	1
Kenfield-Leach Company, Chicago	2
Lake Forest College	1
Lewis Institute, Chicago	1
Mining World Publishing Company	2
Newberry Library, Chicago	1
Open Court Publishing Company, Chicago	1
Peoria Public Library	1
Special Park Commission, Chicago	1
State Board of Agriculture, Springfield	4
State Entomologist, Springfield	2
State Geological Survey, Urbana	2
State Historical Library, Springfield	3
State Laboratory of Natural History, Urbana	2
University of Chicago	5
University of Illinois, Urbana	10

INDIANA

Department of Geology and Natural Resources, Indianapolis	1
Indiana Academy of Science, Indianapolis	1
John Herron Art Institute, Indianapolis	2
Notre Dame University	1
Purdue University, Lafayette	10
State Board of Forestry, Indianapolis (gift)	1

IOWA

Iowa State Horticultural Society, Des Moines	1
State College of Agriculture, Ames	1
State Historical Department, Des Moines	1
University of Iowa, Iowa City	2

KANSAS

Agricultural Experiment Station, Manhattan	8
State Board of Agriculture, Topeka	4
State Historical Society, Topeka	1

KENTUCKY

Agricultural Experiment Station, Lexington	4
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LOUISIANA

Agricultural Experiment Station, Baton Rouge	6
Commission Panama-Pacific International Exposition, Baton Rouge	1

Commissioner of Agriculture and Immigration, Baton Rouge	1
Louisiana Historical Society, New Orleans (gift)	1
Louisiana State Museum, New Orleans	1

MAINE

Agricultural Experiment Station, Orono	4
Bowdoin College, Brunswick	1
Portland Public Library	1

MARYLAND

Agricultural Experiment Station, College Park	1
Enoch Pratt Free Library, Baltimore	2
Geological Survey, Baltimore	2
Johns Hopkins University, Baltimore	1
Maryland Physiological Researches, Baltimore	1
State Board of Forestry, Baltimore	1
State Horticultural Society, College Park	2

MASSACHUSETTS

Agricultural Experiment Station, Amherst	8
American Academy of Arts and Sciences, Boston	28
American Antiquarian Society, Boston	2
Amherst College	1
Archæological Institute of America, Boston	1
Boston Museum of Fine Arts	2
Boston Public Library	1
Boston Society of Natural History	1
Cambridge Public Library	1
Clark University, Worcester	1
Essex Institute, Salem	2
Harvard College, Cambridge	2
Harvard Museum of Comparative Zoölogy, Cambridge	2
Horticultural Society, Boston	2
Institute of Technology, Boston	1
New Bedford Free Public Library	2
Peabody Institute, Peabody	1
Peabody Museum, Cambridge	2
Peabody Museum, Salem	1
Phillips Academy, Andover	1
Salem Public Library	2
Springfield Library Association	1
Springfield Natural History Museum	1
Tufts College, Boston	4
United Shoe Machinery Company, Beverly (gift)	4
Williams College, Williamstown	2
Worcester Free Public Library	1

MICHIGAN

Academy of Sciences, Ann Arbor	1
Agricultural Experiment Station, Agricultural College	6
Department of Parks and Boulevards, Detroit	3
Detroit Museum of Art	1
Geological and Biological Survey, Lansing	3

Grand Rapids Public Library	2
Michigan College of Mines, Houghton	1
National Educational Association of the United States, Ann Arbor	1
State Board of Agriculture, Lansing	1
University of Michigan, Ann Arbor	3
MINNESOTA	
Agricultural Experiment Station, St. Paul	6
Minneapolis Historical Society, St. Paul	2
Minnesota Geological Survey, Minneapolis	1
St. Paul Institute (gift)	1
University of Minnesota, Minneapolis	3
MISSISSIPPI	
Agricultural Experiment Station, Agricultural College	1
Mississippi Geological Survey, Jackson	2
MISSOURI	
Agricultural Experiment Station, Columbia	6
Bureau of Geology and Mines, Jefferson City	2
City Art Museum, St. Louis	2
Missouri Botanical Garden, St. Louis	1
St. Louis Academy of Sciences	1
St. Louis Mercantile Library Association	1
St. Louis Public Library	2
St. Louis University	1
State Historical Society, Columbia	2
Washington University, St. Louis	1
MONTANA	
Agricultural Experiment Station, Bozeman	1
Montana State University, Missoula	1
NEBRASKA	
Agricultural Experiment Station, Lincoln	2
University of Nebraska, Lincoln	2
NEW HAMPSHIRE	
College of Agriculture, Durham	4
NEW JERSEY	
Agricultural Experiment Station, Trenton	8
Craftsman, Eastwood (gift)	2
Department of Conservation and Development, Trenton	1
New Jersey Horticultural Society, Trenton	1
Newark Museum Association (gift)	8
Newark Public Library	1
State Museum, Trenton	2
Stevens Institute of Technology, Hoboken	1
NEW MEXICO	
Agricultural Experiment Station, Mesilla Park	3
Museum of New Mexico, Santa Fé	1
State School of Mines, Socorro	1
NEW YORK	
Agricultural Experiment Station, Geneva	6
American Geographical Society, New York City	2

American Institute of Mining Engineers, New York City	2
American Museum of Natural History, New York City	23
Brooklyn Botanic Garden	12
Brooklyn Institute of Arts and Sciences	4
Buffalo Historical Society	1
Buffalo Public Library	1
Buffalo Society of Natural History	1
Carnegie Foundation for the Advancement of Teaching, New York City	1
Columbia University, New York City	1
Cornell University, Ithaca	2
Conservation Commission, Albany	1
Forestry Quarterly, Ithaca	1
Japan Society, New York City (gift)	1
Lake Mohonk Conference of International Arbitration	1
Metropolitan Museum of Art, New York City	2
Munn and Company, New York City (gift)	2
Museum of the American Indian, New York City	3
National Association of Audubon Societies, New York City	1
New York Academy of Sciences, New York City	1
New York Botanical Garden, New York City	1
Pratt Institute Free Library, Brooklyn	2
Public Library, New York City	1
Rockefeller Foundation, New York City	1
State College of Forestry, Syracuse	3
State Library, Albany	9
Staten Island Association of Arts and Sciences, New York City	2
Zoological Society, New York City	3

NORTH CAROLINA

Agricultural Experiment Station, Raleigh	2
Elisha Mitchell Scientific Society, Chapel Hill	1
Geological and Economic Survey, Raleigh	2

NORTH DAKOTA

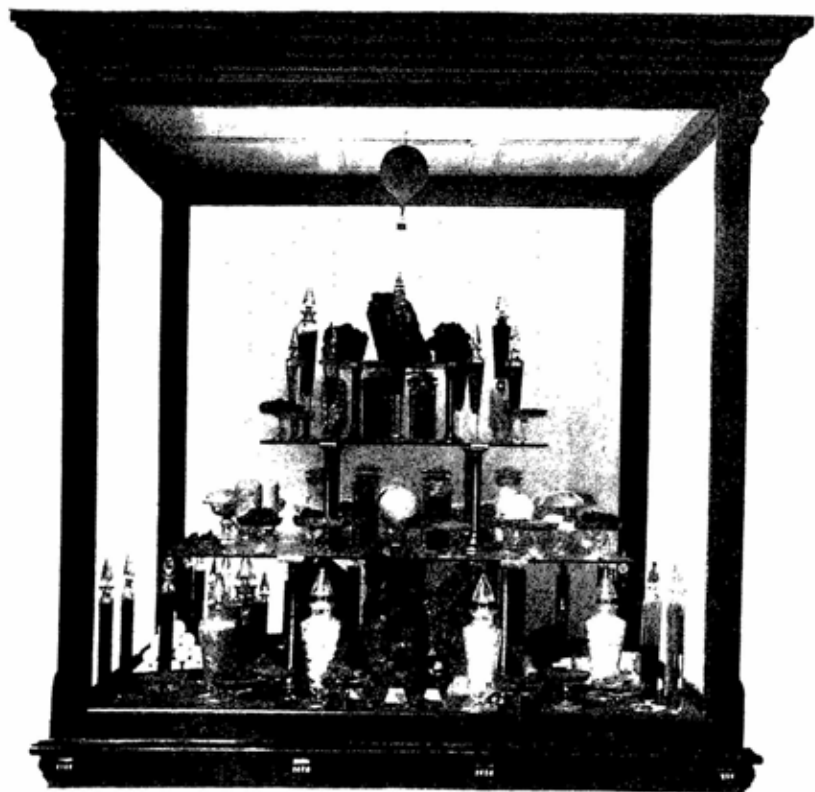
University of North Dakota, University	1
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OHIO

Agricultural Experiment Station, Wooster	14
Cincinnati Museum Association	2
Cleveland Museum of Art	1
Cleveland Public Library	2
Denison University, Granville	1
Geological Survey, Columbus	1
Lloyd Library, Cincinnati	2
Marietta College	1
Oberlin College	1
Ohio State Academy of Science, Columbus	1
State Archaeological and Historical Society, Columbus	1
State University, Columbus	15
University of Cincinnati	2
Wilson Ornithological Club, Oberlin	1

OKLAHOMA

Agricultural Experiment Station, Stillwater	3
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COLLECTION ILLUSTRATING BY-PRODUCTS OF GAS MANUFACTURE.

OREGON

Agricultural Experiment Station, Corvallis (gift)	5
Fish and Game Commission, Corvallis	3
Timberman, Portland (gift)	1

PENNSYLVANIA

Agricultural Experiment Station, Harrisburg	1
American Entomological Society, Philadelphia	6
American Journal of Pharmacy, Philadelphia	1
American Philosophical Society, Philadelphia	1
Association of Engineering Societies, Philadelphia	2
Bryn Mawr College	1
Carnegie Institute, Pittsburgh	2
Carnegie Library, Pittsburgh	4
Carnegie Museum, Pittsburgh	14
Delaware County Institute of Science, Media	1
Engineers' Society of Western Pennsylvania, Pittsburgh	2
Franklin Institute, Philadelphia	2
Pennsylvania Museum and School of Industrial Art, Philadelphia	1
Philadelphia Academy of Natural Sciences	1
Philadelphia College of Physicians	1
Philadelphia Commercial Museum	1
Philadelphia Numismatics and Antiquarian Society	1
State Department of Agriculture, Harrisburg	3
United States Indian School, Carlisle	2
University of Pennsylvania, Philadelphia	2
Wagner Free Institute of Science, Philadelphia	1
Wistar Institute of Anatomy and Biology, Philadelphia	6
Wyoming Historical and Geological Society, Wilkes-Barre	1

PHILIPPINE ISLANDS

Bureau of Education, Manila	5
Department of the Interior, Bureau of Science, Manila	8
Philippine Library, Manila	1

RHODE ISLAND

Providence Public Library	1
Roger Williams Park Museum, Providence	1

SOUTH CAROLINA

Charleston Museum	1
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TENNESSEE

Agricultural Experiment Station, Nashville	2
State Board of Entomology, Nashville	1

TEXAS

International Society of Archaeologists, Hico	2
Scientific Society, San Antonio	1
Texas Folklore Society, Austin	1
University of Texas, Austin	1

VERMONT

University of Vermont, Burlington	3
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VIRGINIA

Agricultural Experiment Society, Blacksburg	1
Geological Survey, Charlottesville	2

126 FIELD MUSEUM OF NATURAL HISTORY—REPORTS, VOL. V.

University of Virginia, Charlottesville	1
Virginia State Library, Richmond	1
WASHINGTON	
State Library, Seattle	3
WASHINGTON D. C.	
Biological Society	1
National Academy of Sciences	2
National Geographic Society	2
Pan American Union	2
United States Government	597
WEST VIRGINIA	
Agricultural Experiment Station, Morgantown	2
University of West Virginia, Morgantown	1
WISCONSIN	
Archæological Society, Milwaukee	1
Beloit College	2
Geological and Natural History Survey, Madison	15
Milwaukee Public Museum	1
Natural History Society, Madison	1
State Historical Society, Madison	1
University of Wisconsin, Madison	4
WYOMING	
Agricultural Experiment Station, Laramie	1
Adams, Charles C., Syracuse, New York	1
Ames, Oakes, North Easton, Massachusetts (gift)	4
Atkinson, George F., Ithaca, New York	1
Atwater, C. G., New York City (gift)	1
Ayer, Mrs. Edward E., Chicago (gift)	1
Ayer, Edward E., Chicago (gift)	2
Bingham, Hiram, New Haven, Connecticut	2
Blatchley, William S., Indianapolis, Indiana	1
Boas, Franz, New York City	4
Casey, Thomas L., Washington, D. C.	2
Chalmers, William J., Chicago (gift)	6
Clute, Willard N., Joliet, Illinois	2
Cockerell, T. D. A., Boulder, Colorado	7
Cole, Fay-Cooper, Chicago	1
Conklin, Edwin Grant, Princeton, New Jersey	1
Cook, Melville T., New Brunswick, New Jersey	5
Cumings, E. R., Bloomington, Indiana (gift)	1
Curtiss, Samuel W., Chicago (gift)	1
Dietz, Harry T., Indianapolis, Indiana (gift)	1
Evans, Alexander W., New Haven, Connecticut	6
Farrington, Oliver C., Chicago	1
Farwell, Oliver A., Detroit, Michigan	4
Fernald, Merritt L., Cambridge, Massachusetts	2
Field, Marshall, Chicago (gift)	1
Freer, Charles L., Detroit, Michigan (gift)	1
Gerhard, William J., Chicago	12

Gunsaulus, Frank W., Chicago (gift)	34
Hall, Ivan C., Berkeley, California	5
Lamb, D. S., Washington, D. C. (gift)	1
Laufer, Berthold	10
Le Baron, Francis, Austin, Texas (gift)	1
Magee, Charles H., Manila, Philippine Islands (gift)	1
Mayer, Alfred G., Washington, D. C.	1
Meyer, K. F.	1
Millsbaugh, Charles F., Chicago	101
Montané, Louis, Havana, Cuba (gift)	2
Moore, Clarence B., Philadelphia, Pennsylvania	2
Morse, Edward S., Salem, Massachusetts	1
Muttkowski, Richard, Milwaukee, Wisconsin (gift)	1
Nichols, Henry W., Chicago	4
Osborn, Henry Fairfield, New York City (gift)	3
Simms, Stephen C., Chicago	10
Smith, John D., Washington, D. C.	1
Stewart, V. B., Ithaca, New York	4
Taubenhaus, J. J., Newark, Delaware	2
Todd, W. E. Clyde, Pittsburgh, Pennsylvania	4
Trelease, William, Urbana, Illinois	1
Weld, Lewis W., Chicago (gift)	3

AFRICA

Durban Museum	3
Geological Society, Johannesburg	1
South African Museum, Cape Town	2
Union of South Africa, Department of Agriculture, Pretoria	1

ARGENTINA

Museo de Farmacologia, Buenos Aires	4
Museo de La Plata	1
Museo Nacional, Buenos Aires	1

AUSTRALIA

Australian Museum, Sydney	3
Australian Ornithologists' Union, Melbourne	1
Botanic Gardens and Government Domains, Sydney	2
Department of Agriculture, Adelaide	2
Department of Agriculture, Hobart, Tasmania	1
Department of Agriculture, Melbourne	1
Department of Agriculture, Sydney	2
Department of Fisheries, Sydney	1
Department of Mines, Sydney	4
Field Naturalists' Club, Melbourne	1
Geological Survey, Perth	3
Government of the Commonwealth, Melbourne	2
Linnean Society of New South Wales, Sydney	1
Public Library, Museum and Art Gallery, Adelaide	1
Royal Society of New South Wales, Sydney	1
Royal Society of South Australia, Adelaide	1
South Australian Ornithological Association, Adelaide	1

Technical Museum, Sydney	4
Western Australian Museum and Art Gallery, Perth	1
BOHEMIA	
Naturwissenschaftliche Landesforschung für Böhmen, Prague	1
BRAZIL	
Bibliotheca Nacional, Rio de Janeiro	2
Instituto Agronomico de Estado, Sao Paulo	1
Instituto Archeologico e Geographico Pernambucano, Recife (gift)	1
Museu Nacional, Rio de Janeiro	1
CANADA	
Department of Agriculture, Ottawa	16
Department of Agriculture, Victoria	2
Department of Marine and Fisheries, Ottawa	2
Department of Mines, Ottawa	2
Department of Mines, Victoria	1
Department of the Interior, Geological Survey, Ottawa	17
Entomological Society of Ontario, Toronto	1
Minister of Education, Toronto	1
Natural History Society of New Brunswick, St. John	1
Naturaliste Canadien, Quebec	1
Nova Scotian Institute of Science, Halifax	1
Numismatic and Antiquarian Society, Montreal	1
Ottawa Field Naturalists' Club, Ottawa	1
Provincial Museum, Victoria	2
Royal Canadian Institute, Toronto	15
University of Toronto	3
CENTRAL AMERICA	
Museo Nacional de Nicaragua, Managua	1
CEYLON	
Colombo Museum	2
Royal Botanic Garden, Peradeniya	1
CHILE	
Biblioteca Nacional, Santiago	3
CHINA	
Botanical and Forestry Department, Hong Kong	1
Royal Asiatic Society, North China Branch, Shanghai	3
DENMARK	
Académie Royale des Sciences et des Lettres de Danemark, Copenhagen	1
K. Danske Videnskabernes Selskab, Copenhagen	1
Naturhistorisk Forening, Copenhagen	2
Société Botanique de Copenhagen	2
University, Zoological Museum, Copenhagen	1
EGYPT	
Institut Egyptien, Cairo	1
Survey Department, Cairo	1
ENGLAND	
Anthropological Institute of Great Britain and Ireland, London	1
Ashmolean Natural History Society of Oxfordshire, Oxford	1
Bristol Museum and Art Gallery	1
British Association for the Advancement of Science, London	2

British Museum (Natural History), London	7
Cambridge Antiquarian Society	1
Cambridge Philosophical Society	1
Cambridge University Library	18
Cardiff Naturalists' Society	2
Dove Marine Laboratory, Cullercoats, Northumberland	1
Free Public Museum, Liverpool	1
Great Britain Geological Survey, London	1
Imperial Bureau of Entomology, London	2
Imperial College of Science and Technology, London	1
Lancashire Sea Fisheries Laboratory, Liverpool	1
Linnean Society, London	3
Liverpool Biological Society	1
Liverpool Marine Biological Station	1
Manchester Field Naturalists' and Archaeologists' Society	1
Oxford Delegates of University Museum	1
Royal Botanic Gardens, Kew	2
Royal Geographical Society, London	2
Royal Horticultural Society, London	1
Royal Society, London	2
Royal Society of Arts, London	2
South London Entomological and Natural History Society, London	1
Tring Zoological Museum	1
Wellcome Historical Medical Museum, London	2

FRANCE

Académie des Sciences, Paris	2
Ecole d'Anthropologie, Paris	1
La Nature, Paris	2
Société de Géographie, Toulouse	1
Société des Sciences Naturelles, La Rochelle	2
Société Nationale d'Agriculture, Paris	1

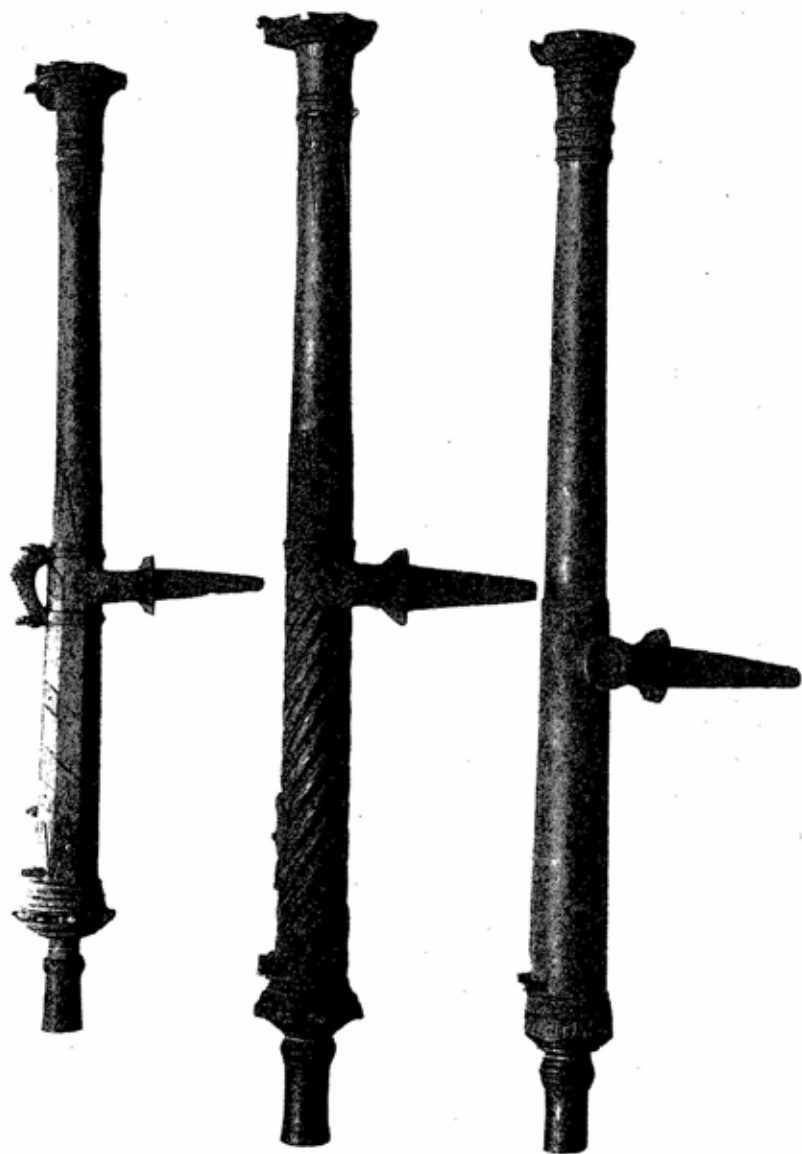
GERMANY

Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgs., Berlin	1
Deutsche Morganländische Gesellschaft, Halle	23
Geographische Gesellschaft, Munich	1
Gesellschaft für Erdkunde, Leipzig	1
K. Bibliothek, Berlin	1
K. Museum für Völkerkunde, Berlin	2
K. Sammlungen für Kunst und Wissenschaft, Dresden	2
Naturwissenschaftlicher Verein für Schleswig-Holstein, Kiel	1
Naturwissenschaftliche Wochenschrift, Jena	1
Städtisches Museum für Völkerkunde, Leipzig	1
Universitäts Bibliothek, Giessen	5
Verein für Vaterländische Naturkunde in Württemberg, Stuttgart	1
Verein für Volkskunde, Berlin	1

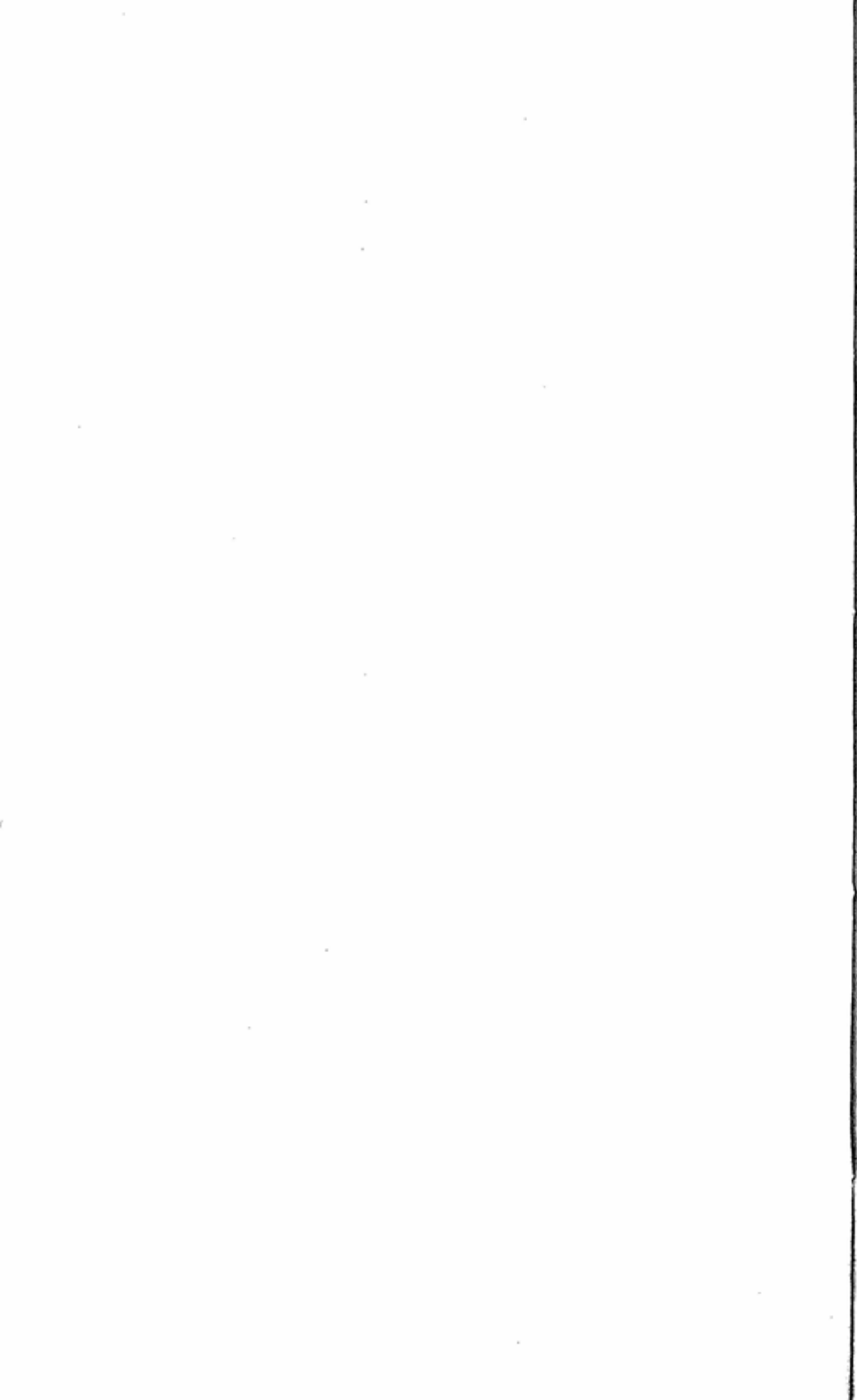
INDIA

Anthropological Society, Bombay	1
Archaeological Survey, Burma	1
Archaeological Survey, Calcutta	6
Archaeological Survey, Peshawar	1

Colony of Mauritius	1
Department of Agriculture, Bombay	1
Department of Agriculture, Madras	1
Department of Agriculture, Pusa	1
Geological Survey, Calcutta	3
Government Museum, Madras	4
Indian Museum, Calcutta	8
National Indian Association, Calcutta (gift)	1
Royal Asiatic Society of Bengal, Calcutta	9
Royal Asiatic Society, Straits Branch, Singapore	17
Royal Botanic Gardens, Calcutta	3
Superintendent of Government Printing, Calcutta	3
IRELAND	
Royal Dublin Society	2
Royal Irish Academy, Dublin	2
ITALY	
American Society, Rome	1
Istituto Zoologico, Naples	1
Museo Civico di Storia Naturale, Genoa	1
R. Accademia delle Scienze, Turin	2
R. Scuola Superiore d'Agricoltura, Portici	3
R. Università Museo Zoologico, Naples	1
Società dei Naturalisti, Naples	1
Società Geografica Italiana, Rome	2
Società Geologia Italiana, Rome	1
Società Italiana di Antropologia, Florence	1
Società Italiana di Scienze Naturali, Milan	1
Società Romana di Antropologia, Rome	1
Società Toscana di Scienze Naturali, Pisa	1
Università Pavia. Istituto Botanico, Milan	1
JAPAN	
Anthropological Society of Tokyo	1
Bureau of Productive Industry Formosa Government, Taihoku	1
Geological Survey, Tokyo	2
Imperial University of Tokyo, College of Science	3
Tokyo Botanical Society	1
JAVA	
Bataviaasch Genootschap van Kunsten Wetenschappen, Batavia	2
Department of Agriculture, Buitenzorg	8
Jardin Botanique, Buitenzorg	1
MEXICO	
Instituto Biologico, Mexico	9
Instituto Geologico, Mexico	4
Sociedad Científica "Antonio Alzate," Mexico	1
NETHERLANDS	
Rijks Ethnographisch Museum, Leiden	2
Rijks Museum van Natuurlijke Historie, Leiden	2
Rijks Geologisch Mineralogisch Museum, Leiden	1
Stads Bibliotheek, Haarlem	1



BRASS CANNON, SO-CALLED LANTAKA, CAPTURED FROM THE MORO, PHILIPPINES.
Gift of Edward E. Ayer.



NEW ZEALAND

Auckland Institute and Museum, Wellington	1
Department of Agriculture, Wellington	3
Department of Mines, Wellington	4
Dominion Museum, Wellington	1

PERU

Cuerpo de Ingenieros de Minas, Lima	1
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SCOTLAND

Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries	1
Fisheries Board, Edinburgh	2
Geological Society, Edinburgh	1
Royal Botanic Society, Edinburgh	1
Royal Society, Edinburgh	2

SPAIN

Instituto Nacional de Ciencias Fisico-Naturales, Madrid	3
Junta de Ciencias Naturales, Barcelona	1
Museo de Ciencias Naturales, Madrid	1
R. Academia de Ciencias, Madrid	2
Sociedad Española de Historia Natural, Madrid	2

SWEDEN

K. Biblioteket, Stockholm	3
K. Svenska Vetenskapsakademien, Stockholm	1
K. Vitt. Hist. och Antik. Akademien, Stockholm	1
Svenska Sällskapet för Antropologi och Geografi, Stockholm Upsala University	1

SWITZERLAND

Geographisch-Ethnographische Gesellschaft, Zürich	1
Musée d'Histoire Naturelle, Lausanne	1
Musée Ethnographique, Neuchatel	1
Musée Zoologique, Lausanne	1
Naturforschende Gesellschaft, Basel	1
Ostschweizerische Geograph.-Commerc. Gesellschaft, St. Gallen	1
Société de Physique et d'Histoire Naturelle, Geneva	2
Société des Sciences Naturelles, Fribourg	1
Société Neuchateloise de Géographie	2
Universität, Bern	8

WEST INDIES

Agricultural Experiment Station, Porto Rico	1
Biblioteca Nacional., Havana	1
Department of Agriculture, Kingston	1
Estacion Central Agronomico, Santiago de las Vegas	2
Imperial Department of Agriculture, Barbadoes	2
Jamaica Institute, Kingston	1
Trinidad and Tobago Department of Agriculture, Port of Spain	2
Universidad de la Habana, Havana	2

Brazil, Vital, Sao Paulo, Brazil (gift)	1
Codazzi, Ricardo L., Bogota, Colombia	2
Carpenter, G. H., Dublin, Ireland	1

Caziot, E., Paris, France (gift)	I
Chodat, R., Geneva, Switzerland	17
Dunod, H., Paris, France	4
Haddon, Alfred C., London, England	I
Heim, Albert, Zürich, Switzerland	3
Lambe, L. M., Ottawa, Ontario	I
Morice, R. L., Paris, France	I
Northcote, Thomas W., London, England (gift)	3
Outes, Felix F., Buenos Aires, Argentina	I
Richter, Rudolf, Frankfurt-a-M., Germany	4
Sapir, Edward, Ottawa, Canada	I
Sergi, G., Rome, Italy	I
Simoens da Silva, Antonio Carlos, Rio de Janeiro, Brazil	3
Wülfing, E. A., Heidelberg, Germany	3

ARTICLES OF INCORPORATION

STATE OF ILLINOIS.

DEPARTMENT OF STATE.

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D., 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of the State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL.]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science, and History.

3. The management of the aforesaid Museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black, and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McMurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McChurg, James W. Scott, George F. Bissell, John R. Walsh, Chas. Fitzsimons, John A. Roche, E. B. McCagg, Owen P. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL.]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the Corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS.

(JUNE 12, 1916.)

ARTICLE I.

MEMBERS.

SECTION 1. Members shall be of five classes, Annual Members, Corporate Members, Life Members, Patrons, and Honorary Members.

SEC. 2. Annual members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after notice of election, and within thirty days after each recurring annual date. The failure of any person to make such initiatory payment and such annual payments within said time shall, at the option of the Board of Trustees, be sufficient grounds for the forfeiture of an annual membership.

This said annual membership shall entitle the member to:

First.— Free admittance for the member and family, to the Museum on any day.

Second.— Ten tickets every year, admitting the bearer to the Museum on pay days.

Third.— A copy of all publications of the Museum when requested.

Fourth.— Invitations to all special exhibits, receptions, lectures, or other functions which may be given at the Museum.

SEC. 3. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such persons named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. The failure of any person to make such payment within said time shall, at the option of the Board of Trustees, be ground for forfeiture of his corporate membership. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SEC. 4. Any person paying into the treasury the sum of five hundred dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues.

SEC. 5. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SEC. 6. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of fifteen members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting, by a majority vote of the members of the Board present.

SEC. 2. Regular meetings of the Board shall be held on the second Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SEC. 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause, or from indisposition to serve longer in such capacity, shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Secretary, an Assistant Secretary, and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, and the Second Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the second Monday of January of each year, and shall be called the Annual Meeting.

SEC. 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SEC. 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrants shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SEC. 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SEC. 3. The Treasurer shall give bond in such amount, and with such sureties, as shall be approved by the Board of Trustees.

SEC. 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and the Chairman of the Administration Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SEC. 5. The Harris Trust and Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The Bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director and Chairman of the Administration Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR.

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the institution, subject to the authority of the Board of Trustees and its Committees. The

Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SEC. 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology, and Zoology, each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SEC. 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work of the Museum for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR.

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be six Committees as follows: Finance, Building, Auditing, Pension, Administration, and Executive.

SEC. 2. The Finance, Auditing and Pension Committees shall each consist of three members, and the Building and Administration Committees shall each consist of five members. All members of these five Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SEC. 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Administration Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and two other members of the Board to be elected by ballot at the Annual Meeting.

SEC. 4. Four Members shall constitute a quorum of the Executive Committee; three members shall constitute a quorum of the Administration Committee, and in all other standing Committees, two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly

elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any member of the Board of Trustees to act in place of the absentee.

SEC. 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SEC. 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SEC. 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the respective Committees shall be considered as authorized to make the expenditures detailed therein. No increase in the expenditures under any items of the Budget shall be made, except by authority of the Board of Trustees, but the Executive Committee shall have authority, in cases of emergency, to expend a further total sum not exceeding two thousand dollars in any one month.

SEC. 8. The Administration Committee shall have general supervision of the affairs of the Museum. The Committee shall hold one meeting each month with the Director at the Museum within a week preceding each Monthly Meeting of the Board of Trustees.

SEC. 9. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SEC. 10. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SEC. 11. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SEC. 12. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE.

SECTION 1. At the November meeting of the Board, each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Administration Committee, the Auditing Committee, and the Pension Committee, and

for two members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution, and the workings, researches, installations, expenditures, field work, laboratories, library publications, lecture courses, and all scientific and maintenance activities.

SEC. 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.



BIRD LIFE IN NORTHERN BRAZIL.
JABIRU (LARGE BIRDS IN THE CENTER), SUN BITTERN (WITH WINGS SPREAD), BOAT-BILLED HERON (ON EXTREME RIGHT), IBISES, ETC.
Stanley Field Ornithology Fund.

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STANLEY McCORMICK	
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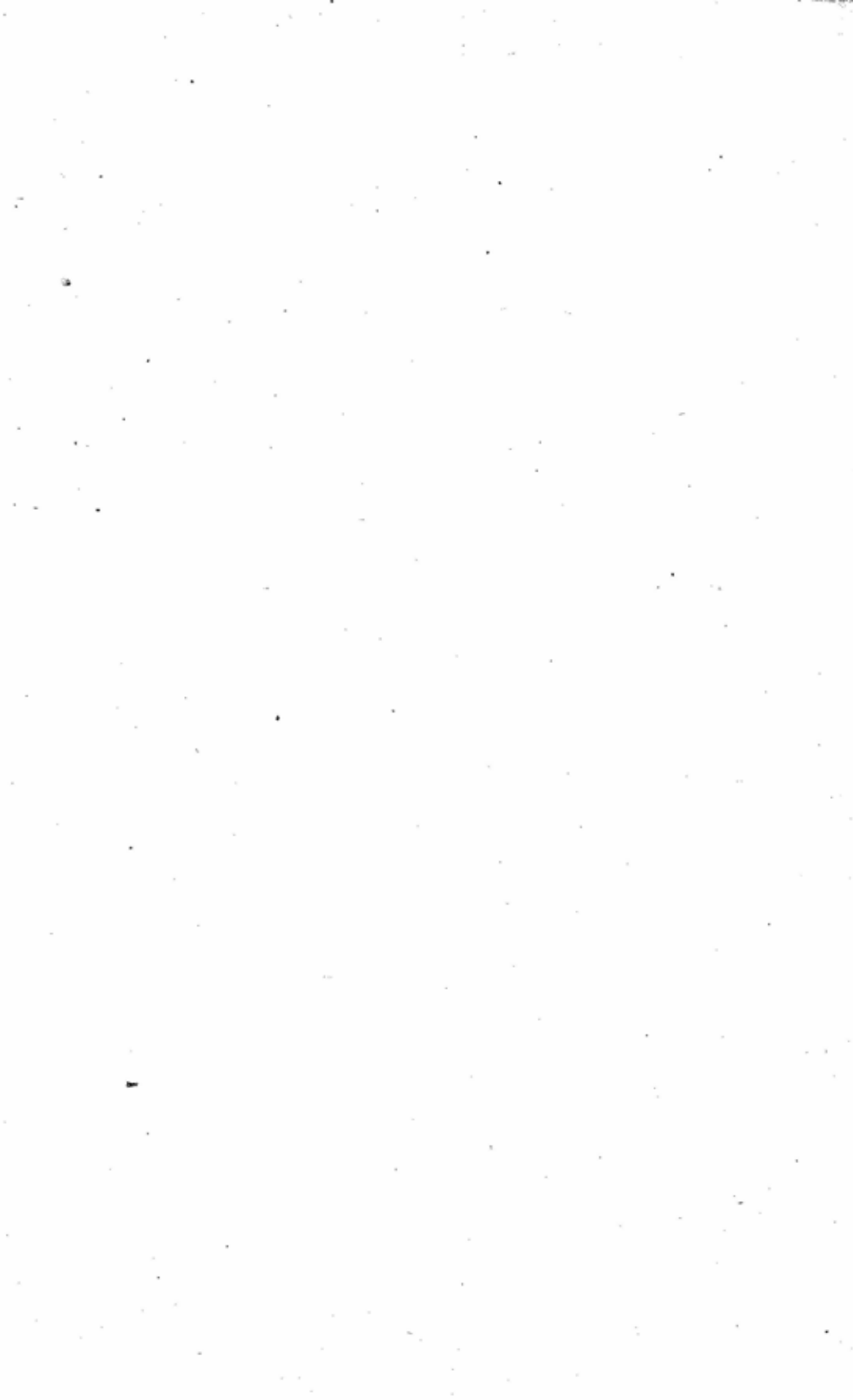
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